

Ministry of Energy and Mines  
BC Geological Survey

Assessment Report  
Title Page and Summary

TYPE OF REPORT [type of survey(s)]: Prospecting and Geochemical Sampling

TOTAL COST: \$30,031.73

AUTHOR(S): Sarah Ryan and Matt Krukowski SIGNATURE(S): Sarah Ryan and Matt Krukowski

NOTICE OF WORK PERMIT NUMBER(S)/DATE(S): N/A YEAR OF WORK: 2019

STATEMENT OF WORK - CASH PAYMENTS EVENT NUMBER(S)/DATE(S): N/A

PROPERTY NAME: Angus Property

CLAIM NAME(S) (on which the work was done): Angus (1065076)

COMMODITIES SOUGHT: Au, Ag, Cu, Mo

MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN: 092C190; 092C191; 092C192; 092C193

MINING DIVISION: Victoria Mining Division NTS/BCGS: 092 C16

LATITUDE: 48 ° 53 'N " LONGITUDE: 124 ° 1 'W " (at centre of work)

OWNER(S):  
1) James Rogers 2) \_\_\_\_\_

MAILING ADDRESS:  
460-688 West Hastings St, Vancouver, BC, V6B 1P1

OPERATOR(S) [who paid for the work]:  
1) Kootenay Zinc Corp. 2) \_\_\_\_\_

MAILING ADDRESS:  
400-837 West Hastings St, Vancouver, BC, V6C 3N6

PROPERTY GEOLOGY KEYWORDS (lithology, age, stratigraphy, structure, alteration, mineralization, size and attitude):  
The Angus property is predominantly underlain by rocks of the Paleozoic Sicker Group; specifically, pyroclastics and sediments of the McLaughlin Ridge and Cameron River Formations. These rocks have been intruded by Triassic gabbro, possibly correlative with the Karmutsen Formation and Jurassic quartz diorite of the Island Intrusions (Allen, 1987).

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS: 00566; 14462; 15013; 16053A; 16053B; 16053C; 16097A; 16097B; 16097C; 18871; 22329; 25885; 32885

TYPE OF WORK IN THIS REPORT	EXTENT OF WORK (IN METRIC UNITS)	ON WHICH CLAIMS	PROJECT COSTS APPORTIONED (incl. support)
<b>GEOLOGICAL (scale, area)</b>			
Ground, mapping	_____	_____	_____
Photo interpretation	_____	_____	_____
<b>GEOPHYSICAL (line-kilometres)</b>			
<b>Ground</b>			
Magnetic	_____	_____	_____
Electromagnetic	_____	_____	_____
Induced Polarization	_____	_____	_____
Radiometric	_____	_____	_____
Seismic	_____	_____	_____
Other	_____	_____	_____
<b>Airborne</b>			
<b>GEOCHEMICAL (number of samples analysed for...)</b>			
Soil 53 samples (2 duplicates)		Angus (1065076)	\$6,714.68
Silt		Angus (1065076)	
Rock 39 rock samples			\$6,714.68
Other			
<b>DRILLING (total metres; number of holes, size)</b>			
Core	_____	_____	_____
Non-core	_____	_____	_____
<b>RELATED TECHNICAL</b>			
Sampling/assaying	_____		\$3,173.00
Petrographic	_____	_____	_____
Mineralographic	_____	_____	_____
Metallurgic	_____	_____	_____
PROSPECTING (scale, area) 5.42 km <sup>2</sup>		Angus (1065076)	\$13,429.37
<b>PREPARATORY / PHYSICAL</b>			
Line/grid (kilometres)	_____	_____	_____
Topographic/Photogrammetric (scale, area)	_____	_____	_____
Legal surveys (scale, area)	_____	_____	_____
Road, local access (kilometres)/trail	_____	_____	_____
Trench (metres)	_____	_____	_____
Underground dev. (metres)	_____	_____	_____
Other	_____	_____	_____
		<b>TOTAL COST:</b>	<b>\$30,031.73</b>

# LONGFORD

EXPLORATION

## ASSESSMENT REPORT

On the

### ANGUS PROPERTY

SOUTHERN VANCOUVER ISLAND, BRITISH COLUMBIA, CANADA

**Located Within:**

NTS Sheet: 092 16

**Centered at Approximately:**

48°53'N Latitude North by Longitude 124°1'W

**Report Prepared for:**

**Kootenay Zinc Corp.**

400-837 West Hastings Street  
Vancouver, BC, V6C 3N6

**Report Prepared by:**

**Longford Exploration Services Ltd.<sup>1</sup>**

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EFFECTIVE DATE: Nov 14, 2019



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# 1 Summary

The Angus property is located in the Chemainus River valley approximately 25 km northwest of the city of Duncan on Vancouver Island, British Columbia. The property is in the Victoria Mining Division, on NTS map sheet 092 C16 and centred at approximately 124°1'W longitude, 48°53'N latitude.

Surface rights and permitting have yet to be completed to allow for further in-depth investigations.

Accesses to the property is from Chemainus River Rd off the Cowichan Valley Highway 18. Smaller logging roads provide reasonable access to much of the property although many of these are blocked to vehicle traffic.

The property lies in the Chemainus River Valley area, part of the Cowichan Lake Valley District of Vancouver Island. This valley is found in the middle of the Insular Mountain ranges, the main mountain range on the island. The highest peak north of Cowichan Lake being Heather Mountain at 1345 m.

This region is populated by first and second growth forest of predominantly fir, hemlock, spruce, cedar and some arbutus in the drier regions. Vancouver Island has been a site of active logging for numerous decades and continues to be actively logged resulting in expansive areas of second and third growth revegetated areas of variable age, and density. At this time there are no anthropological or environmental encumbrances on the Property.

Exploration over the property began in 1964 by E.M. Wilson who carried out geological mapping and rock sampling activities around the “Pogo” property which consisted of four 2-post claims at the centre of the Cow property. Five showings are plotted on his geology map with highest assays from the main showing of 0.43% Zn over 10 ft, 0.48% Pb and 0.09% Cu over 5 ft with trace Ag.

No further work was carried out until 1985, when MPH Consulting Limited carried out a geological mapping and rock sampling program designed to verify previous work carried out by E.M. Wilson. Mapping was carried out at a scale of 1:10,000 and 29 rock samples were collected across the property. Results confirmed 1964 assays and outlined a few shear zones with elevated gold values and a broad zone of disseminated sulphides.

From 1986 to 1998 several exploration programs were carried out which includes: mapping, soil, silt, and rock sampling, 2 DDH holes totaling 213 m, as well as various geophysical surveys such as magnetics, VLF-EM and IP.

In 2010, Auracle Geospatial Science Inc was commissioned by Rock-Con Exploration to carry out a data acquisition, compilation and remote sensing program over the Mt. Sicker, Sognidoro, Volcanics and Meede Tenure Groups. Results suggested potential ranging from Dimension Stone (Sognidoro) to Volcanogenic Massive Sulphide (VMS) metallic mineral occurrence over the survey area.

In September 2019 Longford Exploration personnel visited the Angus Property surrounding the historic Cow Copper showing. During this program 39 rock samples and 53 soil samples were collected. Rock samples ran up to 2,241.1 ppm copper and 29,040.4 ppb gold using ICP-ES/MS (AQ200) assaying method. Samples that ran anonymous for gold were also fire assayed for more accurate/reliable results.

An assessment credit of \$30,031.73 is to be applied to this property for work performed in 2019.

A two-phase exploration program is recommended to further define zones of anomalous mineralization corresponding to the 2019 exploration program. The exploration should consist of geological and structural mapping, prospecting, and soil sampling to test the highest-ranking target areas for further mineralization (Phase 1: \$120,000). Geophysics may also be implemented to further define zones of high priority after additional groundwork is undertaken. Once more defined areas of mineralization are established, diamond drilling should commence if warranted (Phase 2: \$530,000).

## 2 Introduction and Terms of Reference

### 2.1 Purpose of Report

This Assessment Report on the Angus property (the “Property”) was commissioned by Kootenay Zinc Corp. (the “Company”) and completed by Longford Exploration Ltd. (“Longford”) a company incorporated in British Columbia, Canada, with offices at 460 – 688 West Hastings St, Vancouver, BC. The Property is located within the Victoria Mining Division of British Columbia near the town of Duncan.

The sources of information accessed in preparation of this report are listed in the References section of this report (Section 13). The authors have also relied upon information and discussions with the Longford Exploration Services Ltd. field personnel prior to the site visit.

The Longford Exploration crew visited the Property for 3 days between September 27<sup>th</sup> and 29<sup>th</sup>, 2019 as members of the field exploration team. During this visit the crew were acting as independent consultants to the Company to appraise the Property on its mineral potential and to provide opinion on future exploration plans on the Property. There has been no further exploration work on this Property subsequent to the last site inspection.

The authors have no reason to doubt the reliability of the information provided by the Company. The authors reserve the right, but will not be obliged, to revise the report and conclusions if additional information becomes known subsequent to the date of this report.

### 2.2 Geographic Terms

The following geographic areas and features are briefly described for orientation with respect to the text, tables, and figures.

### 2.3 Terms of Reference

In Aug 2019, Kootenay Zinc Corp. (the “company”) commissioned Longford Exploration Services Ltd. to carry out a prospecting and soil sampling program on the Angus Property in Southwest Vancouver Island, BC to assess the property’s prospectivity for copper mineralization.

This Report is intended to be read in its entirety.

### 2.4 Abbreviations and Units of Measurement

Metric units are used throughout this report and all dollar amounts are reported in Canadian Dollars (CAD\$) unless otherwise stated. Coordinates within this report use EPSG 26910 NAD83 UTM Zone 10N unless otherwise stated. The following is a list of abbreviations which may be used in this report:

*Table 2.1 Abbreviations and Units of Measurement*

Abbreviation	Description	Abbreviation	Description
%	percent	li	limonite
AA	atomic absorption	m	metre
Ag	silver	m <sup>2</sup>	square metre
AMSL	above mean sea level	m <sup>3</sup>	cubic metre
as	arsenic	Ma	million years ago
Au	gold	mg	magnetite
AuEq	gold equivalent grade	mm	millimetre
Az	azimuth	mm <sup>2</sup>	square millimetre

Abbreviation	Description
b.y.	billion years
CAD\$	Canadian dollar
cl	chlorite
cm	centimetre
cm <sup>2</sup>	square centimetre
cm <sup>3</sup>	cubic centimetre
cc	chalcocite
cp	chalcopyrite
CIM	Canadian Institute of Mining, Metallurgy and Petroleum
Cu	copper
cy	clay
°C	degree Celsius
°F	degree Fahrenheit
DDH	diamond drill hole
ep	epidote
ft	feet
ft <sup>2</sup>	square feet
ft <sup>3</sup>	cubic feet
g	gram
gl	galena
go	goethite
GPS	Global Positioning System
gpt	grams per tonne
ha	hectare
hg	mercury
hm	hematite
ICP	induced coupled plasma
kf	potassic feldspar
kg	kilogram
km	kilometre
km <sup>2</sup>	square kilometre
l	litre

Abbreviation	Description
mm <sup>3</sup>	cubic millimetre
mn	pyrolusite
Mo	Molybdenum
Moz	million troy ounces
ms	sericite
Mt	million tonnes
mu	muscovite
m.y.	million years
NAD	North American Datum
NI 43-101	National Instrument 43-101
opt	ounces per short ton
oz	troy ounce (31.1035 grams)
Pb	lead
pf	plagioclase
ppb	parts per billion
ppm	parts per million
py	pyrite
QA	Quality Assurance
QC	Quality Control
qz	quartz
RC	reverse circulation drilling
RQD	rock quality description
sb	antimony
Sedar	System for Electronic Document Analysis and Retrieval
SG	specific gravity
sp	sphalerite
st	short ton (2,000 pounds)
t	tonne (1,000 kg or 2,204.6 lbs)
to	tourmaline
um	micron
US\$	United States dollar
Zn	zinc

### 3 Reliance on Other Experts

The authors have relied on ownership information and information developed by both the Company and past owners of the Property. The authors have not researched property title or mineral rights to the Angus Property and expresses no opinion as to the ownership status of the property.

This report is based upon personal examination, by the authors, of all available reports and data on the Angus Property. The Longford Exploration crew visited the Property from September 27<sup>th</sup>, 2019 to the 29<sup>th</sup>, 2019 to appraise the geological environment and assess the Property. The information, opinions and conclusions contained herein are based on:

- Information available to the authors at the time of preparation of this report;
- Assumptions, conditions, and qualifications as set forth in this report;
- Data, reports, and other information supplied by the Company and other third-party sources;
- Site visit to the Property from Sept 27<sup>th</sup> to 29<sup>th</sup>, 2019; and
- The authors' review of all available reports retained samples and legal documents.

As of the date of this report, the authors are not aware of any material fact or material change with respect to the subject matter of this technical report that is not presented herein, or which the omission to disclose could make this report misleading.

## 4 Property Description and Location

### 4.1 Location

The Angus property (Figure 4.1) is located in the Chemainus River valley approximately 25 km northwest of the city of Duncan on Vancouver Island, British Columbia. The property is in the Victoria Mining Division, on NTS map sheet 092 C16 and centred at approximately 124°1'W longitude, 48°53'N latitude.

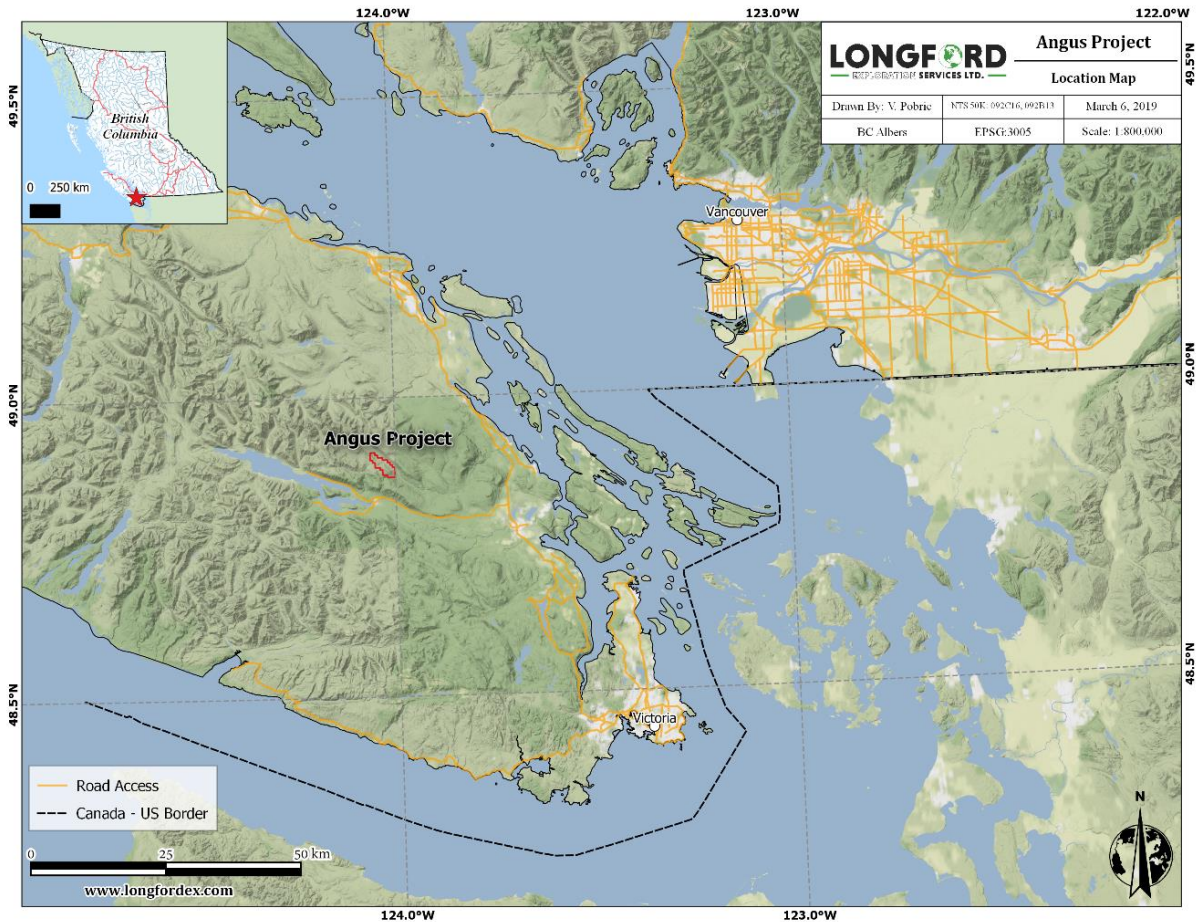


Figure 4.1: Angus Property location map.

### 4.2 Mineral Titles

The Property consists of 1 unpatented mineral claim (Figure 4.2) located in the Victoria Mining Division totalling 1,019.49 hectares. The claim is currently shown in the online registry as being owned 100% by James Rogers who is holding the claim in Bare Trust. The claim is in good standing as of the date of this report (Table 4.1).

Table 4.1 Angus Property mineral tenures.

Title Number	Claim Name	Issue Date	Good to Date	Status	Area (ha)
1065076	Angus	2018-12-12	2019-12-12	GOOD	1,019.49
<b>TOTAL</b>					<b>1,019.49</b>

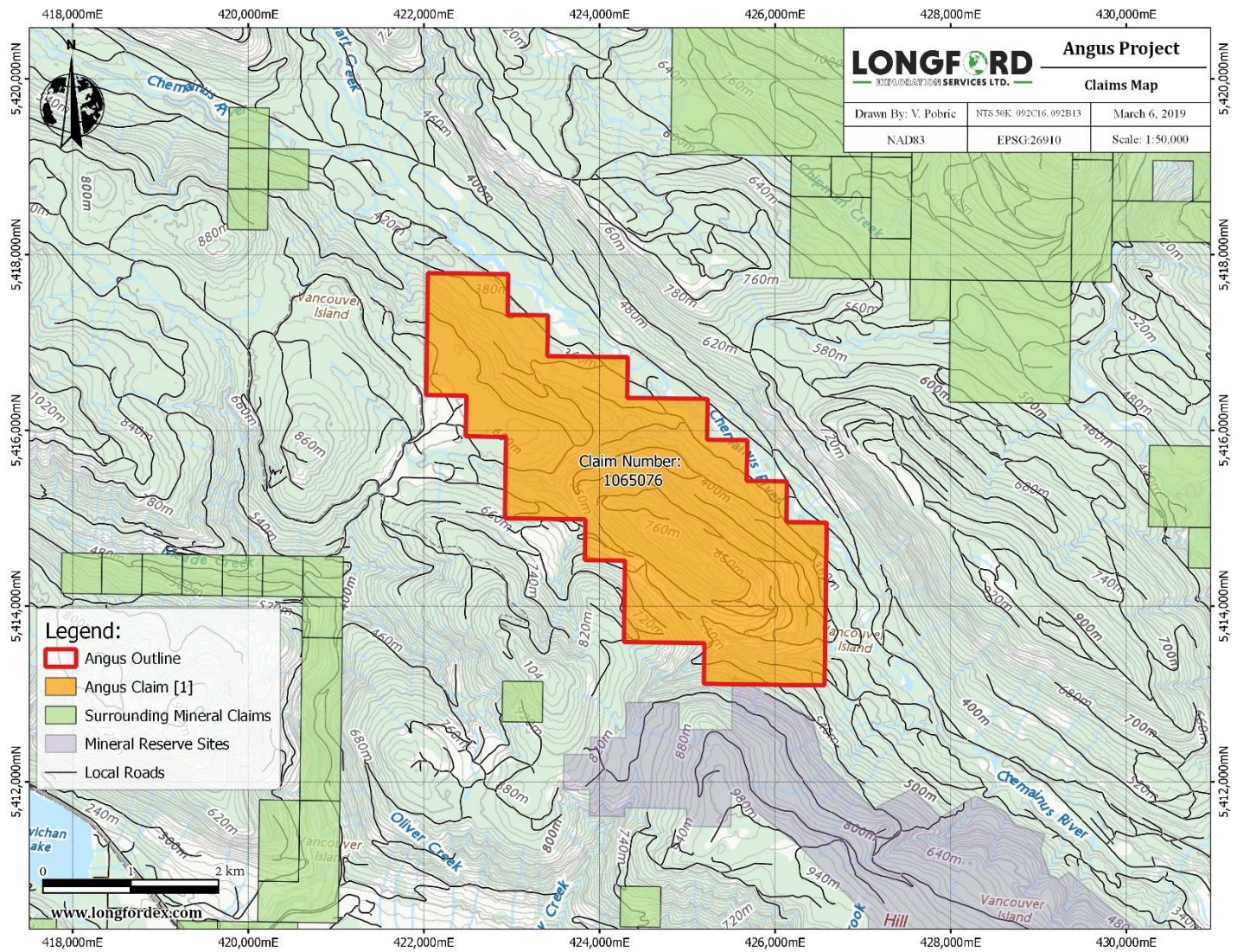


Figure 4.2: Angus Property claims.

### 4.3 Mineral Rights in British Columbia

Mineral Claims in British Columbia are subdivided into two major categories: Placer and Mineral. Both are acquired using the [Mineral Titles Online \(MTO\)](#) system. The online MTO system allows clients to acquire and maintain (register work, payments, etc.) mineral and placer claims. Mineral Titles can be acquired anywhere in the province where there are no other impeding interests (other mineral titles, reserves, parks, etc.).

The electronic Internet map allows you to select single or multiple adjoining grid cells. Cell sizes vary from approximately 21 hectares (457m x 463m) in the south to approximately 16 hectares at the north of the province. Cell size variance is due to the longitude lines that gradually converge toward the North Pole.

MTO will calculate the exact area in hectares according to the cells you select and calculate the required fee. The fee is charged for the entire cell, even though a portion may be unavailable due to a prior legacy title or alienated land. The fee for Mineral Claim registration is \$1.75 per hectare.

Upon immediate confirmation of payment, the mineral rights title is issued and assigned a tenure number for the registered claim. Email confirmation of your transaction and title is sent immediately.

Rights to any ground encumbered by existing legacy claims will not be granted with the cell claim except through the Conversion process. However, the rights held by a legacy claim or lease will accrue to the cell claim if the legacy claim or lease should terminate through forfeiture, abandonment, or cancellation, but not if the legacy claim is taken to lease. Similarly, if a cell partially covers land that is alienated (park, reserve etc.) or a reserve, no rights to the alienated or reserved land are acquired. But, if that alienation or reserve is subsequently rescinded, the rights held by the cell expand over the former alienated or reserve land within the border of the cell.

Upon registration, a cell claim is deemed to commence as of that date (“Date of Issue”) and is good until the “Expiry Date” (Good to Date) that is one year from the date of registration. To maintain the claim beyond the expiry date, exploration and development work must be performed and registered, or a payment instead of exploration and development may be registered. If the claim is not maintained, it will forfeit at the end of the “expiry date” and it is the responsibility of every recorded holder to maintain their claims; no notice of pending forfeiture is sent to the recorded holder.

A mineral or placer claim has a set expiry date (the “Good to Date”), and in order to maintain the claim beyond that expiry date, the recorded holder (or an agent) must, on or before the expiry date, register either exploration and development work that was performed on the claim, or a payment instead of exploration and development. Failure to maintain a claim results in automatic forfeiture at the end (midnight) of the expiry date; there is no notice to the claim holder prior to forfeiture.

When exploration and development work or a payment instead of work is registered, you may advance the claim forward to any new date. With a payment, instead of work the minimum requirement is 6 months, and the new date cannot exceed one year from the current expiry date; with work, it may be any date up to a maximum of ten years beyond the current anniversary year. “Anniversary year” means the period of time that you are now in from the last expiry date to the next immediate expiry date.

All recorded holders of a claim must hold a valid Free Miners Certificate (“FMC”) when either work or a payment is registered on the claim.

Clients need to register a certain value of work or a “cash-in-lieu of work” payment to their claims in MTO. The following tables outline the costs required to maintain a claim for one year:

Table 4.2 BC work requirements for mineral tenures.

Anniversary Years	Work Requirements
1 and 2	\$5 / hectare
3 and 4	\$10 / hectare
5 and 6	\$15 / hectare
7 and subsequent	\$20 / hectare

Table 4.3: BC cash-in-lieu for mineral tenures.

Anniversary Years	Cash Payment-in-Lieu of Work
1 and 2	\$10 / hectare
3 and 4	\$20 / hectare
5 and 6	\$30 / hectare
7 and subsequent	\$40 / hectare

#### 4.4 Property Legal Status

The Mineral Titles Online website (<https://www.mtonline.gov.bc.ca/mtov/home.do>) confirms that all claims of the Angus property as described in Table 4.1 were in good standing at the date of this report and that no legal encumbrances were registered with the Mineral Titles Branch against the titles at that date. The author makes no further assertion with regard to the legal status of the property. The property has not been legally surveyed to date and no requirement to do so has existed.

There are no other royalties, back-in rights, environmental liabilities, or other known risks to undertake exploration.

#### 4.5 Surface Rights in British Columbia

Surface rights are not included with mineral claims in British Columbia. However, the Mineral Tenure Act allows persons holding a valid free miner certificate (free miner) to enter mineral lands to explore for minerals whether surface is owned privately or by the Crown. Right of entry onto these lands does not include land occupied by a building, the area around a dwelling house, orchard land or land under cultivation, protected heritage property or land in a park.

Miners entering on private lands must serve notice in the prescribed manner and compensate the landowner for any loss or damages resulting from the mining activities including prospecting, mapping, sampling, geophysical surveys, as well as any activities that disturb the surface. Landowners must be notified prior to persons entering onto private land for any mining activity and may not begin until eight days after giving notice to the owners of the surface area where the activity will take place. Notice must include the dates when the activities will take place, where the activity will occur, the names and addresses of the free miner or recorded holder and of the on-site person responsible for the operations. Details describing the activities that will be carried out, the number of people that will be on-site including

a map or written description of where the activities will take place. Notices may be e-mailed, faxed, or hand delivered to the landowner. Any substantial changes to the activity described in the notice must be given to the landowner in an amended notice and work may not begin until eight days after the amended notice has been given.

#### 4.6 Permitting

Any work which disturbs the surface by mechanical means on a mineral claim in British Columbia requires a Notice of Work (NOW) permit under the Mines Act. The owner must receive written approval from a Provincial Mines Inspector prior to undertaking such work. This includes but is not limited to the following types of work: drilling, trenching, excavating, blasting, construction of a camp, demolition of a camp, induced polarization surveys using exposed electrodes, and reclamation.

Exploration activities which do not require a NOW permit include prospecting with hand tools, geological/geochemical surveys, airborne geophysical surveys, ground geophysics without exposed electrodes, hand trenching, and the establishment of grids. These activities and those that require Permits are outlined and governed by the Mines Act of British Columbia.

The Chief Inspector of Mines makes the decision if land access will be permitted. Other agencies, principally the Ministry of Forests, Lands and Natural Resources (FLNRO), determine where and how the access may be constructed and used. With the Chief Inspector's authorization, a mineral tenure holder must be issued the appropriate "Special Use Permit" by FLNRO, subject to specified terms and conditions. The Ministry of Energy and Mines makes the decision whether land access is appropriate and FLNRO issue a Special Use Permit. However, a collaborative effort and authorization between ministries, jointly determine the location, design and maintenance provisions of the approved road.

Notification must be provided before entering private land for any mining or exploration activity, including non-intrusive forms of mineral exploration such as mapping surface features and collecting rock, water or soil samples. Notification may be hand delivered, mailed, emailed or faxed to the owner shown on the British Columbia Assessment Authority records or the Land Title Office records. Mining activities cannot start sooner than eight days after notice has been served. Notice must include a description or map of where the work will be conducted and a description of what type of work will be done, when it will take place and approximately how many people will be on the site.

The issuer does not currently have any permits pertaining to exploration on the property.

## 5 Accessibility, Infrastructure and Climate,

### 5.1 Accessibility

Accesses to the property is from Chemainus River Rd off the Cowichan Valley Highway 18. Smaller logging roads provide reasonable access to much of the property although many of these are blocked to vehicle traffic.

Road distances from the Property to select cities and ports are summarized in the following table:

Table 5.1: Driving distances to the Property.

Location	Description	Distance
Duncan (pop. 4,944)	Nearest city with services	27 km
Victoria (pop. 85,795)	Nearest international airport	106.1 km
Nanaimo (pop. 90,505)	Port, mining services centre	76.7 km
2016 Census Canada, Sourced : <a href="https://www12.statcan.gc.ca/census-recensement/index-eng.cfm">https://www12.statcan.gc.ca/census-recensement/index-eng.cfm</a>		

### 5.2 Climate and Physiography

This region is characterized by an oceanic or maritime climate, typical of western coasts in higher middle latitudes of continents. This type of climate generally produces cool summers (relative to its continental mid-latitude counterparts) and mild winters with significant annual rainfall, and few extremes of temperature.

Average daily temperatures in the summer range from 12 to 18 °C, and 2.5 to 6.2 °C in the winter (Table 5-1). The total average annual rainfall for Lake Cowichan is 1975.6 mm with the most significant amount of precipitation occurring between October and March. Spring and summer months are considerably drier, therefore provide ideal conditions for the entire exploration season.

The nearest active weather station to the property is Lake Cowichan weather station, 27 km west of Duncan, BC

Table 5.1 Climate Data for Lake Cowichan weather station (Environment Canada).

Temperature	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year Total
Daily Average (°C)	3.5	4	6.2	8.6	12.1	15	17.8	18.1	15.2	9.8	5.4	2.5	9.8
Record High (°C)	14.5	20	22	28	35	39	40	38	39	29.5	19.4	15	40
Record Low (°C)	-15	-16	-9.4	-7	-1.5	1.1	3	2.8	-1.7	-7	-17	-16	-17
Avg Precipitation (mm)	347	226	216.2	137.4	85.4	57.2	34.7	40.2	51.7	213.3	343.2	295.3	2047.5
Avg Rainfall (mm)	327.3	206.2	209.2	135.9	85.2	57.2	34.7	40.2	51.7	212.5	334.8	280.9	1975.6
Avg Snowfall (cm)	19.8	19.8	7	1.5	0.3	0	0	0	0	0.8	8.4	14.4	72
1981 to 2010 Canadian Climate Normals Lake Cowichan weather station data;													

The property lies in the Chemainus River Valley area, part of the Cowichan Lake Valley District of Vancouver Island. This valley is found in the middle of the Insular Mountain ranges, the main mountain range on the island. The highest peak north of Cowichan Lake being Heather Mountain at 1345 m.

The Cowichan Valley was carved out by a valley glacier which moved eastward during the latter stages of glaciation creating a topography characterized by kettles and kames. Extending as far inland as the Town of Lake Cowichan are the Nanaimo Lowlands, a raised portion of the Georgia Depression. The Mountains on the north side of the Lowlands increase gently to approximately 800 m above the valley floor (Hill 60 Range), and the steeper slopes to the south rise between 600 and 800 m near the Cowichan River. The Upper reaches of the Cowichan Valley is blanketed by glacial till up to 30 m thick and is composed of sand, gravel with pockets of silt and clay.

This region is populated by first and second growth forest of predominantly fir, hemlock, spruce, cedar and some arbutus in the drier regions. The forest floor is covered with salal, ferns, mosses, a variety of berry bushes and edible mushrooms. Vancouver Island has been a site of active logging for numerous decades and continues to be actively logged resulting in expansive areas of second and third growth revegetated areas of variable age, and density.

The fauna in the area include deer, elk, moose, black bears, cougars, wolves, coyotes, and bald eagles. In particular, the Cowichan River was named a Canadian Heritage River in 2003 as it supports freshwater, estuarine and marine ecosystems that provide habitat for a rich variety of fish, wildlife and plant species. The River flows over 47 km from its headwaters in Cowichan Lake to its estuary in Cowichan Bay in eastern Vancouver Island and is considered one of the most valuable and productive salmon and trout streams on the Island.

## 6 History

Exploration over the property began in 1964 by E.M. Wilson who carried out geological mapping and rock sampling activities around the “Pogo” property which consisted of four 2-post claims at the centre of the Cow property. Five showings are plotted on his geology map with highest assays from the main showing of 0.43% Zn over 10 ft, 0.48% Pb and 0.09% Cu over 5 ft with trace Ag. A second showing assayed 0.72% Zn, 0.17% Pb, and 0.13% Cu from a grab sample. Geological mapping at a scale of 1:16,800 was carried out over the area near the main showing and in addition to that a 1:16,800 map over a large area surrounding the Pogo claims (17 approx. the area of the Cow property).

No further work was carried out until 1985, when MPH Consulting Limited carried out a geological mapping and rock sampling program designed to verify previous work carried out by E.M. Wilson. Mapping was carried out at a scale of 1:10,000 and 29 rock samples were collected across the property. Results confirmed 1964 assays and outlined a few shear zones with elevated gold values and a broad zone of disseminated sulphides. Among the highest values returned was assays up to 150 ppb Au, 8 ppm Ag, 1250 ppm Cu, 4720 ppm Zn and 58 ppm Pb.

From 1986 to 1989 several exploration programs were carried out for International Cherokee Developments which includes: mapping, soil, silt, and rock sampling, 2 DDH holes totaling 213 m, as well as various geophysical surveys such as magnetics, VLF-EM and IP (Figures 6.1 and 6.2).

In 1992 and 1998 more prospecting and rock sampling activities took place over the Chem Group, Lookout and Man claims for GLS Global Listing Service and Ron Walton respectively.

In 2010, Auracle Geospatial Science Inc was commissioned by Rock-Con Exploration to carry out a data acquisition, compilation and remote sensing program over the Mt. Sicker, Sognidoro, Volcanics and Meede Tenure Groups. Results suggested potential ranging from Dimension Stone (Sognidoro) to Volcanogenic Massive Sulphide (VMS) metallic mineral occurrence over the survey area.

Several rhodonite, massive sulphide and gold occurrences have been noted in this area of Vancouver Island, a few which have been mined in the past. Most notably the Twin J. Mine, a past producing mine hosted by the Sicker Group. From 1898 to 1964, a total of 305,149 tons of ore was mined which yielded at least 40,014 oz Au, 840,472 oz Ag, 21,344,332 lb Cu, 45,864,654 lb Zn, 418,716 lb Pb, and 2600 lb Cd.

Table 6.1 below summarizes the history of work carried out on the Angus property.

### 6.1.1 Angus

Table 6.1 Work history of mineral occurrences in proximity to the Angus Property

Year	Report	Occurrence	Author	Summary	Comments	Reference
1964	00566	Pogo Claims	Wilson, E.M.	2 maps and 35 rock samples	Highest values returned were 0.72% Zn, 0.48% Pb and 0.13% Cu.	ARIS_0056, 1964, Pogo Claims, Geological Report, Wilson, E.M.
1985	14462	Cow Claims	Neale, T. and Hawkins, T.G.	Verification of 1964 work, mapping, 29 rock samples	Returned values up to 150 ppb Au, 8 ppm Ag, 1250 ppm Cu, 4720 ppm Zn, 710 As, 11 ppm Cd, 6750 ppm P, and 58 ppm Pb.	ARIS_14462, 1985, Cow Claims, Assessment Report, JBL Resources Ltd.
1986	15013	Chem Group (Cow 7, 9, 10, 11 claims)	Neale, T., Hawkins, T.G. & Getslinger, J.S.	Geological mapping, 617 soil samples, 62 silt samples, and 13 rock samples	Grid B rock values up to 1.41 g/ton Au, 1.58% Cu, and 21.94 g/ton Ag; Grid A rock values up to 4.80 g/ton Au, 2.6 ppm Ag, 1.84% Zn, 36.51% Fe, 1011 ppm Cu, 54 ppm Pb, and 2308 V.	ARIS_15013, 1986, Geology and Soil Geochemistry Report, International Cherokee Developments Ltd.
1987	16053A	Chem Group (Cow 7, 9, 10, 11 claims)	Allen, G.	Geological mapping (1:2,500), 2 DDH total 213 m and 81 core samples, 63 rock and 4 silt samples, 838 soil samples, Magnetic survey over 17.975 line-km, VLF-EM 25.850 line-km, IP survey over 3.175 line-km, 92 conifer samples.	Grid A highest rock values returned from a boulder 4.80 g/ton Au and 581 ppm V, source of boulder unknown. Grid B returned values up to 1260 ppb Au.	ARIS_16053A, 1987, Chem Claims, International Cherokee Developments Ltd.

Year	Report	Occurrence	Author	Summary	Comments	Reference
1987	16053B	Chem Group (Cow 7, 9, 10, 11 claims)	Allen, G.	Geological mapping (1:2,500), 2 DDH total 213 m and 81 core samples, 63 rock and 4 silt samples, 838 soil samples, Magnetic survey over 17.975 line-km, VLF-EM 25.850 line-km, IP survey over 3.175 line-km, 92 conifer samples.	Maps.	ARIS_16053B, 1987, Chem Claims, International Cherokee Developments Ltd.
1987	16053C	Chem Group (Cow 7, 9, 10, 11 claims)	Allen, G.	Geological mapping (1:2,500), 2 DDH total 213 m and 81 core samples, 63 rock and 4 silt samples, 838 soil samples, Magnetic survey over 17.975 line-km, VLF-EM 25.850 line-km, IP survey over 3.175 line-km, 92 conifer samples.	Maps.	ARIS_16053C, 1987, Chem Claims, International Cherokee Developments Ltd.
1987	16097A	Cow Claims	Allen, G.	Geological maps (1:2500), Magnetic Survey over 19.1 km, VLF-EM Survey over 10.3 km, 1,099 soil samples, 34 rock samples, 99m of drill core with 75 samples, 30 m long trench	Grid B: rock samples are weakly elevated in Au and up to 28 ppm Ag.	ARIS_16097A, 1987, Cow Property, Geology, Geochemistry, Geophysics, and Diamond Drilling Report, International Cherokee Developments Ltd.

Year	Report	Occurrence	Author	Summary	Comments	Reference
1987	16097B	Cow Claims	Allen, G.	Geological maps (1:2500), Magnetic Survey over 19.1 km, VLF-EM Survey over 10.3 km, 1,099 soil samples, 34 rock samples, 99m of drill core with 75 samples, 30 m long trench	Maps.	ARIS_16097B, 1987, Cow Property, Geology, Geochemistry, Geophysics, and Diamond Drilling Report, International Cherokee Developments Ltd.
1987	16097C	Cow Claims	Allen, G.	Geological maps (1:2500), Magnetic Survey over 19.1 km, VLF-EM Survey over 10.3 km, 1099 soil samples, 34 rock samples, 99m of drill core with 75 samples, 30 m long trench	Maps.	ARIS_16097C, 1987, Cow Property, Geology, Geochemistry, Geophysics, and Diamond Drilling Report, International Cherokee Developments Ltd.
1989	18871	Hill 60 Property (Cow 1-6, 8, Namiko, Namiko 1 and 2 Fr claims)	Lorenzetti, G.M.	Geological mapping (1:10,000 and 1:2,500), 237 soil samples, 25 sediment samples, 54 rock samples, Geophysical surveys (6 km VLF-EM and Magnetometer)	Northwest corner of the Cow 8 claim returned values up to 30 ppb Au, 1760 ppm Zn, 383 ppm Pb, and 353 ppm Cu, Anomalous Au (90-4350 ppb) found in 4 HMC silt samples in northeast part of Cow 8 claim.	ARIS_18871, 1989, Hill 60 Property, International Cherokee Developments Ltd.

Year	Report	Occurrence	Author	Summary	Comments	Reference
1992	22329	Chem Group (Cow 7, 9, 10, 11 claims)	Yip, G.	Geological mapping, prospecting, 14 rocks, 54 samples	Grab sample returned 13,000 ppb Au, 14.7 ppm Ag; grab sample of ash tuff returned 116,600 ppm As; Soil samples returned values up to 102 ppm Cu, 28 ppm Pb, 133 ppm Zn, 260 ppb Au.	ARIS_22329, 1992, Geological Report, GLS Global Listing Service Ltd.
1998	25885	Lookout Claims and Man Claims	Walton, R.	Prospecting and 27 rock samples	Highest assays returned: 325 ppb Au, 10.8 ppm Ag, 1225 ppm Cu, 102 ppm Ni, and 168 ppm Pb.	ARIS_25885, 1998, Prospecting over Lookout Claims, Walton, Ron.
2010	32885	Mt. Sicker, Sognidoro, Volcanics and Meede Tenure Groups	Auracle Geospatial Science Inc.	Spectral Analysis, radar analysis, PIMA ground truthing	Has the potential ranging from Dimension Stone (Sognidoro) to Volcanogenic Massive Sulphide (VMS) metallic mineral occurrence.	ARIS_32885, 2010, Vancouver Island South Group Project Report, Rock-Con Exploration

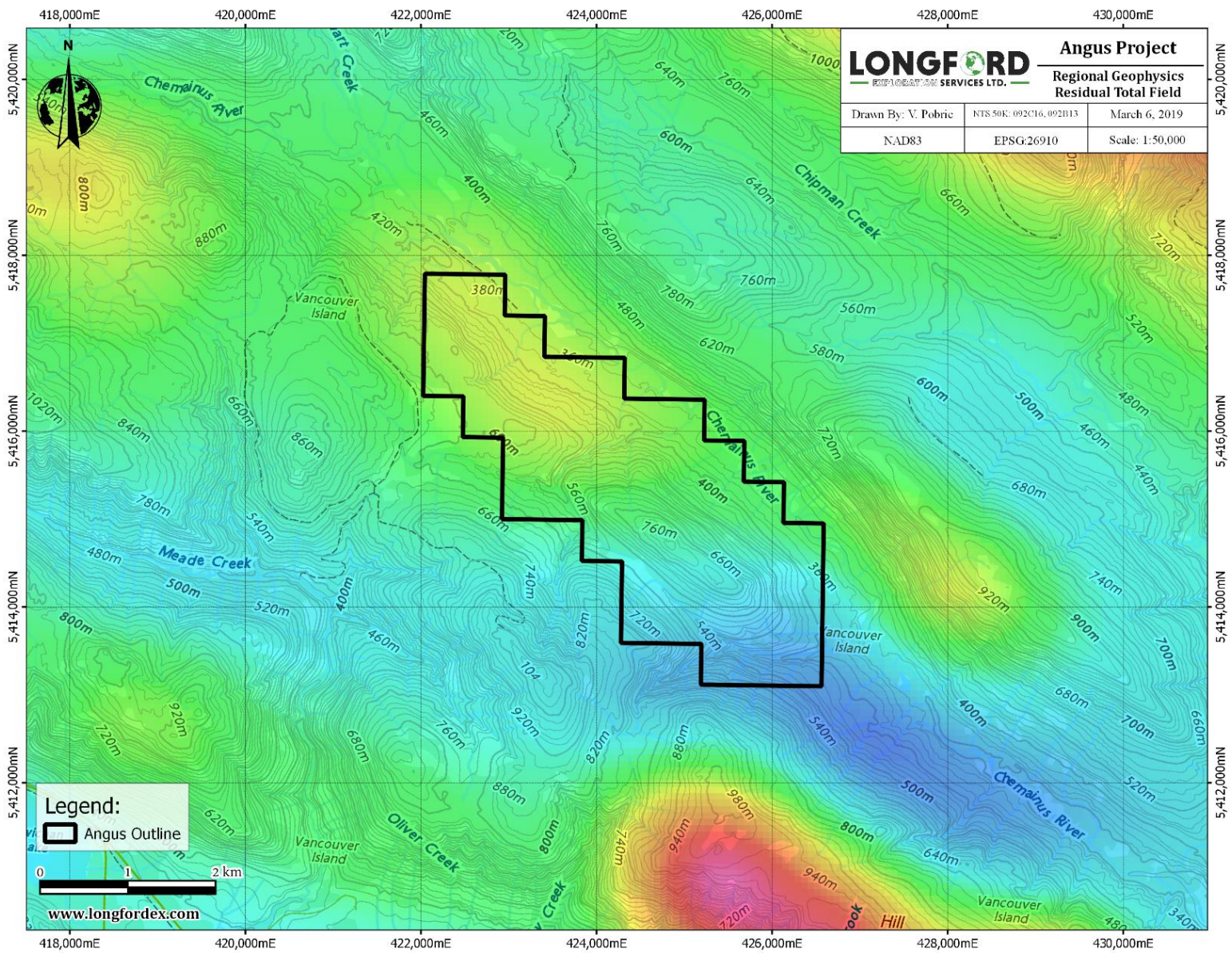


Figure 6.1: Angus property regional geophysics residual total field.

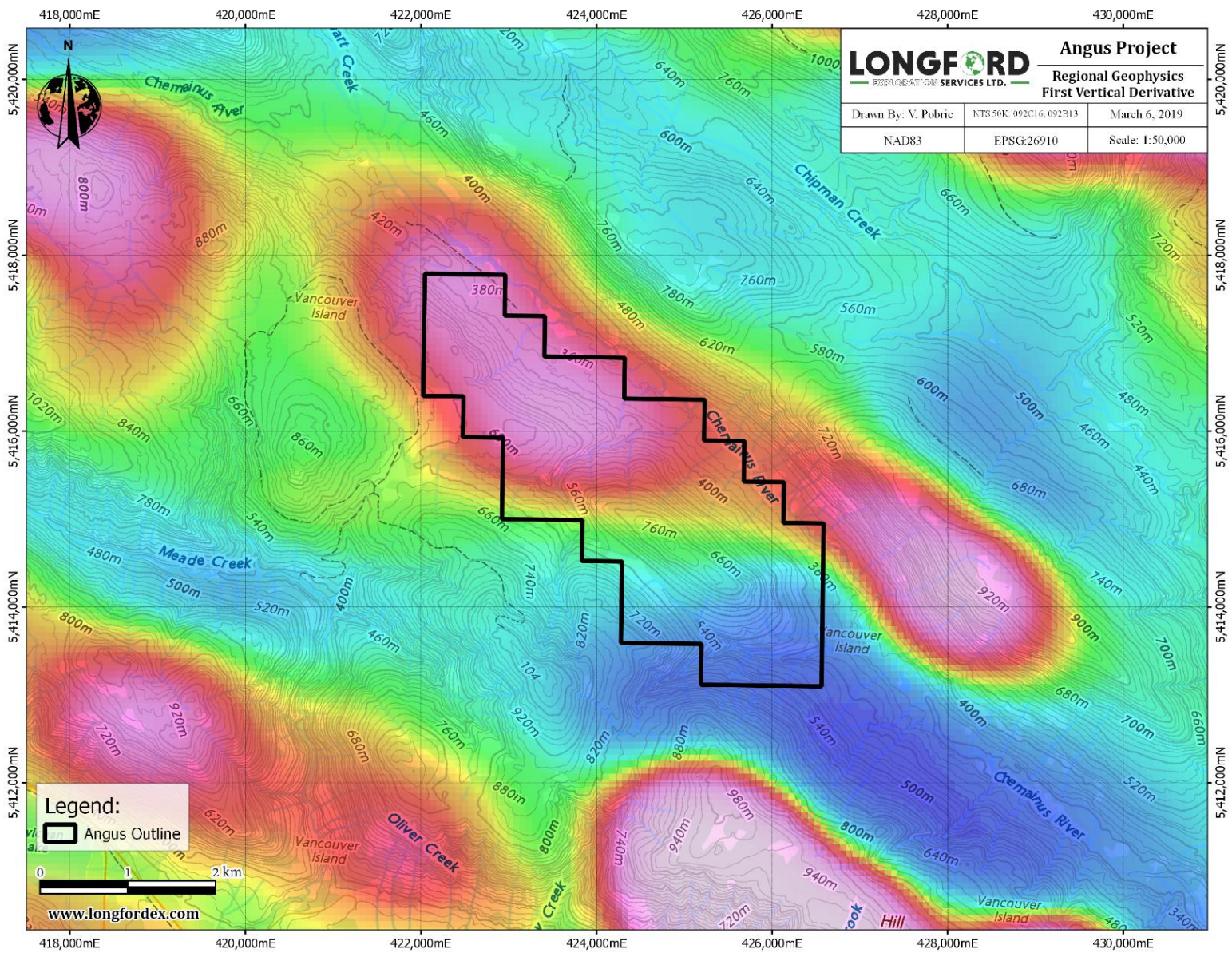


Figure 6.2: Angus property regional geophysics first vertical derivative.

## 7 Geological Setting and Mineralization

### 7.1 Regional geology

Vancouver Island is located within the Insular Superterrane of Western British Columbia, an amalgamation of the Wrangellia Terrane and the Alexander Terrane that eventually accreted to North America between the mid-Jurassic and mid-Cretaceous. This was followed by the accretion of the Pacific Terrane and the Crescent Terrane during the mid-Tertiary time-period. The Angus Property is situated in the southern portion of Vancouver Island and is underlain by rock assemblages of the allochthonous Wrangellia Terrane (Figure 7.1 and 7.2).

#### 7.1.1 The Wrangellia Terrane

The Wrangellia Terrane extends discontinuously north of Vancouver Island through the Queen Charlotte Islands towards central Alaska and is characterized by rocks of the Upper Paleozoic to Lower Mesozoic. In the late Carboniferous Wrangellia collided and amalgamated with the Alexander Terrane in Alaska to form the Insular Superterrane and subsequently accreted to the inboard terranes of the Coast and Intermontane belts as late as the mid-Cretaceous, or as early as the mid-Jurassic (Nixon et al. 2006).

Prior to its accretion, Wrangellia was comprised of the Paleozoic Sicker and Buttle Lake Groups and the Middle Triassic Formation. The Sicker and Buttle Lake groups are composed of Devonian to early Permian island-arc volcanic, volcanoclastic, and sedimentary rocks which are known to host VMS deposits, such as Myra Falls. The Karmutsen Formation is an approximately 6,000 m thick oceanic plateau which conformably overlies the Sicker and Buttle Lake groups; it is composed of tholeiitic flood basalts, minor pillow basalts, pillow breccia and tuff as well as inter-volcanic limestones which underlie approximately 50% of Vancouver Island (Nixon et al. 2006). Conformably overlying the Karmutsen Formation is a shallow-water carbonate layer known as the Quatsino Formation. The Quatsino Formation is composed of massive to bedded bioclastic limestone which formed during the waning stages of the Karmutsen volcanism and associated subsidence. Continued sedimentation and deeper water resulted in the deposition of the impure limestone and siliciclastic rocks of the Parsons Bay Formation (Nixon et al. 2006).

A period of quiescence followed by a renewed phase of island-arc magmatism and sedimentation produced the volcanic, volcanoclastic and epiclastic strata of the Bonanza Group, along with the coeval intrusions of the Island Plutonic Suite (Nixon et al. 2006).

Lorenzetti (1989) has summarized regional geology (Figure 7.1) based on previous work by J.T. Fyles, A. Sutherland Brown, and P. Cowley (Massey, 1987) as follows:

#### **Sicker Group**

Muller (1980a) proposed the following subdivision of the Sicker Group, from oldest to youngest: Nitinat, Formation, Myra Formation, Sediment-Sill Unit, and Buttle Lake Formation.

In the Cowichan Lake area, distinctive yet correlative lithologic units within the Sicker Group have been mapped by Massey (1987), who draws on Sutherland Brown's (1986) units. The Nitinat Formation and McLaughlin Ridge Formation are within the Youbou Subgroup, and the Cameron River Formation and Mount Mark Formation are within the Buttle Lake Subgroup

Table 7.1: Sicker group table of sub-groups and formations.

<b>Upper Silurian to Lower Permian</b>	
<b>Sicker Group</b>	
<b>Buttle Lake Subgroup:</b>	Cameron River Formation
	Mount Mark Formation
<b>Youbou Subgroup:</b>	Nitinat Formation
	McLaughlin Ridge Formation

The **Nitinat Formation** consists predominantly of mafic volcanic rocks, most commonly flow-breccias or agglomerates including some massive flows, and rare pillow basalts. Locally, medium-grained, generally massive basaltic tuff is interbedded with the flows. The flow-breccia is composed of fragments of basalt up to 30 cm in length containing phenocrysts of uralitized pyroxene as well as amygdules, both from 1 mm to more than 1 cm in size, in a matrix of finer grained, similar basalt(?). Thin sections show pale green amphibole (uralite) is replacing clinopyroxene. Uralitized gabbroic to dioritic rocks underlie and intrude the volcanics and are believed to represent feeder dykes, sills, and magma chambers to the volcanics. The Nitinat Formation may be distinguished from the similar Karmutsen Formation by the abundance of uralite phenocrysts, a usual lack of pillow basalts, lack of dallasite alteration between pillows (characteristic of the Karmutsen) locally pervasive foliation, and lower greenschist or higher metamorphic grade.

The **Myra Formation** overlies the Nitinat Formation, possibly with minor unconformity. In the Nitinat-Cameron River area the Myra Formation is made up of a lower massive to widely banded basaltic tuff and breccia unit, a middle thinly banded albite-trachyte tuff and argillite unit, and an upper thick-bedded, -medium-grained albite-trachyte tuff: and breccia unit. In the lower unit, crudely layered, mottled maroon and green volcanoclastic greywacke, grit and breccia are succeeded by beds of massive, medium-grained dark tuff up to 20 m thick, interlayered with thin bands of alternating light and dark, fine-grained tuff with local fine to coarse breccias containing fragments of Nitinat Formation volcanics. The middle unit comprises a sequence of thinly interbedded, light feldspathic tuff (albite-trachyte or keratophyre composition) and dark marine argillite which has the appearance of a graded greywacke argillite turbidite sequence. In the upper part of the middle unit, sections of thickly bedded to massive black argillite occur. The upper unit contains fine and coarse crystal tuffs in layers up to 10 m thick with local rip-up clasts and slabs of argillite up to 1 m in length as well as syn-sedimentary breccias of light coloured volcanic and chert fragments in a matrix of black argillite. Mapping by Fyles (1955) in the area north of Cowichan Lake

located a thick sequence of mainly massive green volcanics (Nitinat Formation), overlain by a 'marker' unit consisting of a sequence of thin-bedded, cherty tuffs with several metres of coarse breccia containing fragments of amygdaloidal volcanics between it and the Nitinat Formation. Overlying the marker unit are grey to black feldspathic tuffs and argillaceous sediments and minor breccias. Muller (1980a) considers the marker unit to correspond to the lower unit of the Myra Formation, while the overlying unit of tuffs and sediments is correlated with the middle unit "and probably contains the upper ... unit as well". In the Mount Sicker area, the Myra Formation is more pervasively deformed, and consists of well-bedded, mainly felsic tuff and breccia, interbedded with black argillite and some greywacke. The rocks have been converted to quartz-chlorite-sericite schist in steep and overturned isoclinal folds. Breccia fragments are commonly epidotized. The "Tyee Quartz Porphyry" is a porphyritic rhyolite containing quartz eyes to 5 mm that occurs partly as cross cutting sills and partly as flows(?) within the Myra Formation. Tyee Quartz Porphyry is related to the Saltspring Intrusions. The type locality of the Myra Formation is Myra Creek, at the south end of Eluttle Lake, about 160 km northwest of Duncan. Volcaniclastic rocks consisting dominantly of rhyodacitic or rhyolitic tuff, lapilli tuff, breccia, and some quartz porphyry and minor mafic flows and argillite (Upper Myra Formation) are host to Westmin Resources Ltd.'s Myra, Lynx, Price, and H-W massive sulphide (Cu-Zn-Pb-Au-Ag-Cd) deposits. Muller (1980a) estimated the thickness of the Nitinat Formation at about 2000 m and that of the Myra Formation at 750 to 1000 m. Fyles' (1955) work indicates a thickness of at least 1500 m for the Nitinat Formation, and at least 1000 m for the Myra Formation in the Cowichan Lake area. Both the Nitinat and Myra Formations were dated as Devonian and/or older by Muller (1980a).

**The Sediment-Sill** Unit is transitional between the Myra and Buttle Lake Formations. The upper and lower contacts are poorly defined. Thin-bedded, turbidite-like, very silicified or cherty, massive argillite and siltstone are interlayered with diabasic sils. The sediments show conspicuous dark and light banding on joint surfaces. The sills consist of a fine-grained, greenish black matrix containing feldspar phenocrysts up to more than 1 cm, commonly clustered in rosettes up to a few centimetres in diameter, producing a very distinctive "flower porphyry" appearance. Sub-ophitic textures may also be visible. The sediments are dated as Mississippian in age, whereas the sills are believed to represent feeders to Triassic Karmutsen volcanics.

The **Buttle Lake Formation** consists of a basal green and maroon tuff and/or breccia overlain by coarse-grained, crinoidal and calc-arenitic limestone, fine-grained limestone with chert nodules and some dolomitic limestone. Lesser amounts of argillite, siltstone, greywacke, or chert are present. In the area southeast of Cowichan Lake, the Buttle Lake Formation consists of laminated, calcareous, grey siltstone and black argillite containing lenses of coarse-grained calcarenite, minor massive beds of crinoidal limestone (about 1 m thick), and lenses and nodules of chert. The section was described by an earlier worker as mainly interbedded chert and limestone (Yole in Muller, 1980a) The Buttle Lake Formation is up to 466 m thick (approximately 300 m thick southeast of Cowichan Lake). The age of the formation, based on fossil evidence, appears to be Middle Pennsylvanian, but may be as young as Early Permian (Muller, 1980a). This has been confirmed by recent dating work by Brandon and others (1986), including isotopic as well as conodont ages, which indicates that rocks of the Buttle Lake Formation are early Middle Pennsylvanian through Early Permian in age.

## **Vancouver Group**

The **Karmutsen Formation** volcanic rocks unconformably to para-conformably overlie the Buttle Lake Formation limestone to form the base of the Vancouver Group. They are the thickest and most widespread rocks on Vancouver Island. The formation consists mainly of dark grey to black, or dark green, tholeiitic pillow basalt, massive basalt, and pillow breccia. Flows are commonly aphanitic, feldspar porphyritic, and amygdaloidal. Pillow lavas generally occur toward the base of the section. Conglomerate containing clasts of Sicker Group rocks and jasperoid tuff, forms basal sections in the Nitinat-Horne Lake area to the northwest. Karmutsen Formation rocks are generally relatively undeformed compared to Sicker Group rocks and are dated Upper Triassic and older. Massive to thick-bedded limestone of the Quatsino Formation is widespread in the area south of Cowichan Lake. The limestone is black to dark grey and fine-grained to microcrystalline. Coarse-grained marble occurs in the vicinity of intrusive rocks. The majority of known economic skarn deposits on Vancouver Island are hosted by Quatsino limestone. Thin-bedded limestone also occurs within the formation. Fossils indicate an age of Upper Triassic (Muller and Carson, 1969).

## **Westcoast Complex**

The **Westcoast Complex** comprises a variety of plutonic and metamorphic mafic crystalline rocks, including amphibolite, diorite, and quartz diorite with homogeneous, agmatitic or gneissic textures. Dioritic or agmatitic bodies underlying or intruding the Nitinat Formation are included. Metamorphosed Karmutsen Formation and/or Sicker Group rocks grade locally into the complex and are believed to be its protolith, having been migmatized in Early Jurassic time. The mobilized granitoid portion of the complex is believed to be the source of the Island Intrusions and, indirectly, the Bonanza Group volcanics (Muller, 1981, 1982). Small bodies of recrystallized limestone found within the complex are believed to be derived mainly from the Quatsino Formation, and to a lesser extent from the Buttle Lake Formation.

## **Bonanza Group**

**Bonanza Group** stratigraphy varies considerably, as it represents parts of several different eruptive centres of a volcanic arc. Basaltic, rhyolitic, and lesser andesitic and dacitic lava, tuff, and breccia with intercalated beds and sequences of marine argillite and greywacke make up the Bonanza Group. In the area south of Cowichan Lake, the volcanics are described as dark brown, maroon, and yellow-grey massive tuff, volcanic breccia, and massive or plagiophyric flows (Muller, 1982). Bonanza Group volcanics are considered to be Early Jurassic extrusive equivalents of the Island Intrusions.

## **Island Intrusions**

Exposures of **Island Intrusions** comprising mainly quartz diorite and lesser biotite-hornblende granodiorite occur throughout the area and are assigned an age of Middle to Upper Jurassic. Intrusive contacts with Sicker and Bonanza Group volcanic rocks, are characterized by transitional zones of gneissic rocks and migmatite, although contacts with Karmutsen Formation volcanic rocks are sharp and well-defined. Skarn zones occur at the contact of Island Intrusion rocks with Quatsino Formation limestone and less abundantly with Buttle Lake Formation limestone.

## Nanaimo Group

Upper Cretaceous Nanaimo Group sedimentary rocks occur throughout the area, unconformably overlying Paleozoic Sicker Group rocks. Extensive exposures occur in the Chemainus and Cowichan Kiver valleys. The formations present comprise the basal portions of the Nanaimo Group.

The **Comox Formation** consists mainly of quartzo-feldspathic, cross-bedded beach facies sandstone and lesser conglomerate. Numerous intercalations of carbonaceous and fossiliferous shale and coal are characteristic.

The **Haslam Formation** is a nearshore littoral depositional facies unit characterized by massive bedded fossiliferous sandy shale, siltstone and shaley sandstone. Interbedded coarse clastic conglomerate, pebbly sandstone and arkosic sandstone of the Extension-Protection Formation are beach and deltaic sands. Minor shale and coal are reported.

## 7.2 Regional Mineralization

Several mineral occurrences are known to occur on northern Vancouver Island which includes the following styles of deposits (*after* Pawliuk, 1994):

1. Skarn deposits: Copper-iron and lead-zinc skarns
2. Copper in basic volcanic rocks (Karmutsen Formation): in amygdules, fractures, small shears and quartz carbonate veins, with no apparent relationship to intrusive activity
3. Veins: with gold and/or base metal sulphides, reacted to intrusive rocks
4. Porphyry copper deposits: largely in the country rock surrounding or enveloping granitic rocks and their porphyritic phases

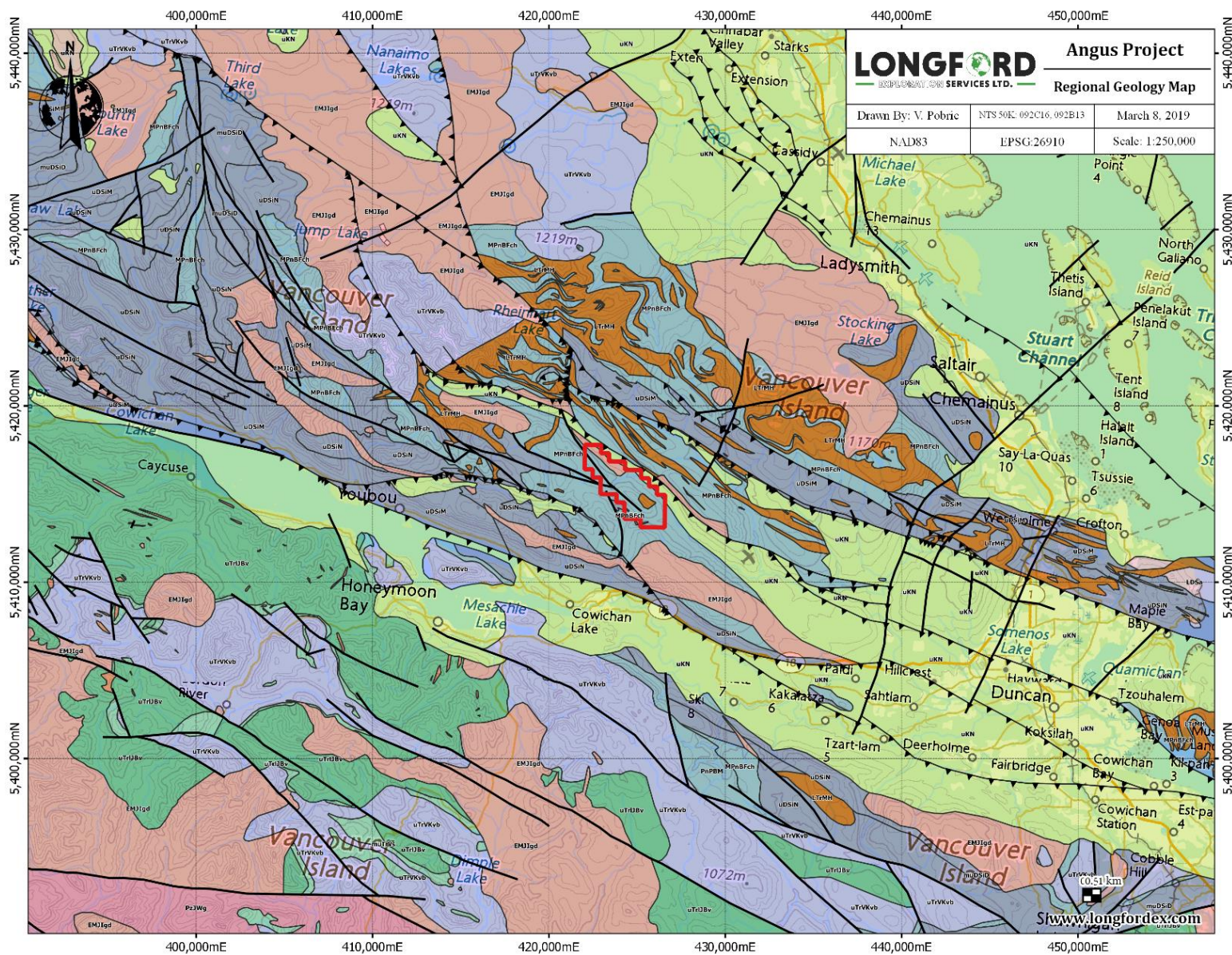



















Figure 7.1: Angus property regional geology map.

## Legend:

### Regional Bedrock Geology

-  EOIM: Eocene to Oligocene Mount Washington Plutonic Suite quartz diorite, feldspar-hornblende dacite porphyry
-  uKN: Upper Cretaceous Nanaimo Group undivided sedimentary rocks
-  EMJIfp: Early Jurassic to Middle Jurassic Island Plutonic Suite feldspar porphyritic intrusive rocks
-  EMJIgd: Early Jurassic to Middle Jurassic Island Plutonic Suite granodioritic intrusive rocks
-  uTrVKvb: Upper Triassic Vancouver Group - Karmutsen Formation basaltic volcanic rocks
-  uTrIJBv: Upper Triassic to Lower Jurassic Bonanza Group undivided volcanic rocks
-  muTrVs: Middle Triassic to Upper Triassic Vancouver Group undivided sedimentary rocks
-  LTrMH: Late Triassic Mount Hall Gabbro gabbroic to dioritic intrusive rocks
-  PnPBM: Mississippian to Lower Permian Buttle Lake Group - Mount Mark Formation limestone bioherm/reef
-  MPnBFch: Mississippian to Pennsylvanian Buttle Lake Group - Fourth Lake Formation chert, siliceous argillite, siliciclastic rocks
-  MPnBFvb: Mississippian to Pennsylvanian Buttle Lake Group - Fourth Lake Formation basaltic volcanic rocks
-  uDSiN: Middle Devonian to Upper Devonian Sicker Group - Nitinat Formation calc-alkaline volcanic rocks
-  uDSiM: Middle Devonian to Upper Devonian Sicker Group - Mclaughlin Ridge Formation volcanoclastic rocks
-  muDSiD: Middle Devonian to Upper Devonian Sicker Group - Duck Lake Formation basaltic volcanic rocks
-  LDSa: Late Devonian Saltspring Plutonic Suite granodioritic intrusive rocks
-  PzJWg: Paleozoic to Jurassic Westcoast Crystalline Complex intrusive rocks, undivided

### Other

-  Angus Outline

### Faults



-  Faults
-  Thrust fault

Figure 7.2: Angus Property regional geology legend.

### 7.3 Property Geology

The Angus property is predominantly underlain by rocks of the Paleozoic Sicker Group; specifically, pyroclastics and sediments of the McLaughlin Ridge and Cameron River Formations (Figure 7.3). These rocks have been intruded by Triassic gabbro, possibly correlative with the Karmutsen Formation and Jurassic quartz diorite of the Island Intrusions (Allen, 1987).

Contacts between formations in the Sicker Group in this area appear to be fault related. On the eastern part of the claim group McLaughlin Ridge Formation pyroclastics are in fault contact with Cameron River Formation sediments. This fault is a shear zone several metres wide which shows up as a distinct lineation on air-photos.

There have been at least three folding events in the area. The main orogeny caused regional folding along a northwest trending axis. Two more folding events caused local distortion along northeast trending axes. It is possible that the gabbro dyke was folded during one of these later events.

#### 7.3.1 Lithological Units

The lithological units underlying the Angus property are described in detail after Allen (1987):

#### **Lithology of Formations and Units of the Sicker Group**

##### **McLaughlin Ridge Formation**

McLaughlin Ridge Formation rocks have been divided in this area into the following units: 2a -Argillite  
Dark brown to black, thinly laminated argillite occurs as units a few tens of metres thick and grades into siltstone or fine -grained tuffs. The argillite generally contains 1-2% pyrite and weathers to a dull rusty brown.

##### 2b – Cherty Tuff

Rocks in this unit generally have dark grey to dark brown crypto-crystalline groundmass and a few percent of very fine-grained dark-grey particles. They are massive to well bedded and grade into tuffaceous siltstone.

##### 2c-Tuffaceous Siltstone, Siltstone

Rocks in this unit may be sedimentary or pyroclastic. They are very fine-grained, dark-grey to dark brown, massive to well bedded, commonly extremely siliceous, and may grade into sandy or Feldspar crystal tuffs.

##### 2d-Sandy Tuff, Sandstone

This unit is a fine to medium coarse-grained, siliceous, dark-grey to brown tuff or lithic wacke with abundant angular, dark lithic fragments. The unit is gradational to tuffaceous siltstone, crustal tuff and lapilli tuff.

##### 2e-Crystal Tuff

This unit is gradational to unit 2c, 2d, and 2f. These rocks have a fine-grained, siliceous, grey to brown groundmass with up to 40% grey, sub-rounded to sub-angular to subhedral feldspar crystal fragments to 1 mm. Felty-chloritic masses may be alterations of mafic crystal fragments. An average of 3 to 4% pyrite and/or pyrrhotite is commonly disseminated throughout.

## 2f-Lapilli Tuff, Tuff Lapilli stone, Agglomerate

These coarse-grained pyroclastics have a dark-greyish-brown siliceous, cherty to coarse-grained tuffaceous matrix with 20 to 70%, <1 cm to >5 cm angular to rounded lithic clasts. Rock types of the clasts include trachytic felspar porphyry (andesite?), feldspar hornblende porphyry and fine-grained, siliceous fragments which could be sedimentary or volcanic. Up to 5% fine-grained, disseminated pyrrhotite is common in the groundmass.

## Lithology of Units of the Cameron River Formation

### Cameron River Formation

The Cameron River Formation was formerly mapped as the Myra Formation and/or Sediment-Sill Unit. It has been sub-divided in the Cow property area to the following units:

#### 4a – Argillite, Slate

Dark grey to black, thinly laminated to massive, soft to extremely hard argillite, grades into both siltstone and cherty siltstone. It is commonly foliated, with slaty cleavage crosscutting bedding. Dark-grey, subhedral, elongated chiastolite porphyroblasts commonly occur in slate. They average 1 mm in length and can make up to 15% of the rock. The argillite generally contains 2-3% pyrite along fractures or as thin films on foliation surfaces. Chiastolite porphyroblasts suggest that the rock has undergone contact metamorphism, probably from the intrusion of the nearby quartz-diorite.

#### 4b-Chert, Cherty Siltstone, Iron Formation

Rocks in this unit are generally crypto-crystalline to very fine-grained granular, extremely siliceous, dark brown to light-grey and range from massive to thinly laminated. They commonly grade into argillite or siltstone.

#### 4c-Siltstone

This unit is dark-grey to dark-brown, massive to thinly laminated and generally very hard (silicified, hornfelsed?). The siltstone is commonly interbedded with and grades into both sandstone and argillite.

#### 4d-Sandstone

The sandstone is dark-grey to dark brown and generally very fine to fine-grained. Rarely the sandstone contains graded beds which indicate 'tops up'.

#### 4e-Crystal Tuff, Tuffaceous Sediment

These tuffs are generally limited in extent, quite thin (beds to 5 cm) and interbedded with argillite and fine-grained sandstone. They have a dark brown, very fine-grained sandy groundmass with up to 10% <1 mm stubby to lath shaped, subhedral, white feldspar crystal fragments.

#### 4f-Hetero-Lithic Conglomerate and Sedimentary Breccia

A discontinuous, few metres wide conglomerate bed (s?) is exposed immediately south of the Cow property and likely trends to the Cow 12 claim. It has dark brown, cherty fine-grained clastic groundmass with up to 20% sub-angular to sub-rounded feldspar porphyry and cherty siltstone (?) clasts up to 1 cm in

diameter. The groundmass also contains traces of chalcopyrite and 2-3% each of pyrite and pyrrhotite. The rock may be partly tuffaceous in nature.

#### 4g-Phyllite

This unit is composed of fine-grained bluish to greenish-grey foliated rocks with a large component of muscovite and chlorite, and up to 5% rounded dark green porphyroblasts less than 1 mm in diameter. The phyllite commonly has gradational contacts with argillite.

#### 4h-Marble

One occurrence of marble was located on the Copper Canyon Main road in the southeast part of the Coq 15 claim. This unit is composed of medium-grained bluish-grey crystalline calcite interbedded with very fine-grained sandstone and cherty siltstone.

### **Lithology of Intrusive Rocks**

#### **6-Triassic Karmutsen Formation**

##### 6d – Gabbro

Gabbro intruding the McLaughlin Ridge Formation pyroclastics is a medium to coarse-grained plutonic rock with a colour index of approximately 50 to 60. Original hornblende crystals largely altered to chlorite and generally form a 'pseudo-groundmass' for 40% stubby, grey, subhedral feldspar crystals averaging 2-4 mm in diameter. In some places, hornblende crystals form phenocrysts up to 2 cm in length. The gabbro intruding Cameron River Formation sediments is variable in texture. In parts it is medium grained equigranular plutonic rock with approximately 50% each of black hornblende and bluish-grey feldspar crystals up to 2 mm in length. In other parts it is strongly foliated. Mafic minerals appear to be totally altered to fine-grained chlorite and original textures have been destroyed. This foliation suggests that the gabbroic dyke has undergone some deformation along with sediments it intruded.

#### **9-Jurassic Mafic Intrusives**

##### 9b – Mafic Dykes

Diabase dykes in this area are generally southeast-trending and less than 2 metres in width. They have distinct chill margins, are rarely amygdaloidal and in some cases have acicular hornblende phenocrysts to 0.5 cm in length. The dykes may be related to an early Dioritic phase (9d) of the island intrusions.

##### 9d – Diorite

Diorite in this area occurs as a narrow margin up to 20 metres wide between the Cameron River Formation sediments and intruding Jurassic quartz-diorite. The diorite is fine to medium grained with 20-40% hornblende, and 50% (+) feldspar.

##### 9f- Feldspar Porphyry

Feldspar porphyry dykes in this area are generally less than 3 metres in width and strike from northeast to southeast. They contain 25% white stubby feldspar phenocrysts up to 1 cm (average 2-4 mm) in diameter, <5% hornblende phenocrysts and rare rounded quartz phenocrysts in a fine-grained dark-grey

to brown groundmass. These dykes may be off shoots from nearby large plugs or sills of quartz-diorite. On nearby properties they crosscut both Cameron River Formation sediments and Triassic gabbroic dykes.

#### 9g-Quartz Diorite

Quartz diorite plugs in this area are up to one kilometer wide and several kilometres long. They are typically medium-grained equigranular plutonic with 75% (+) feldspar (mainly plagioclase), hornblende, up to 10% quartz, and minor amounts of biotite.

### 7.4 Mineralization

Mineralization on the property has been described by Allen (1987) and Lorrenzetti (1989) as being primarily characterized by widely distributed pyrite and chalcopyrite disseminations and blebs occurring along fractures, within quartz and quartz-carbonate veins, and throughout the volcanoclastic, sedimentary and intrusive rocks on the property. Local areas of shearing host heavy malachite staining (BC Minfile 092C 191).

Mineralization is hosted in laminated sediments and volcanoclastics which are spatially related to gabbroic dykes. Sulphides appear to be associated with shear zones and stratiform iron-rich deposits consisting of layered pyrite and magnetite (BC Minfile 092C 116). Pyrite and chalcopyrite are visible in rusty shear zones as disseminations and/or as stringers along bedding, cleavage or crosscutting fractures (BC Minfile 092B 167). Several shears have been noted in northwest trending fine-grained sediments of the Fourth Lake Formation which define a 100 m wide zone of irregular mineralization. These grooved, limonitic shears have been reported to be up to 0.20 m wide with up to 5% pyrite and chalcopyrite, respectively (BC Minfile 092B 166). Strong metal-in-soil anomalies in areas underlain by and adjacent to gabbroic dykes have been reported by Allen (1987) which suggests that mineralization may have occurred during the emplacement of the intrusives.



*Figure 7.3: Sample of mineralization found on the Angus Property.*

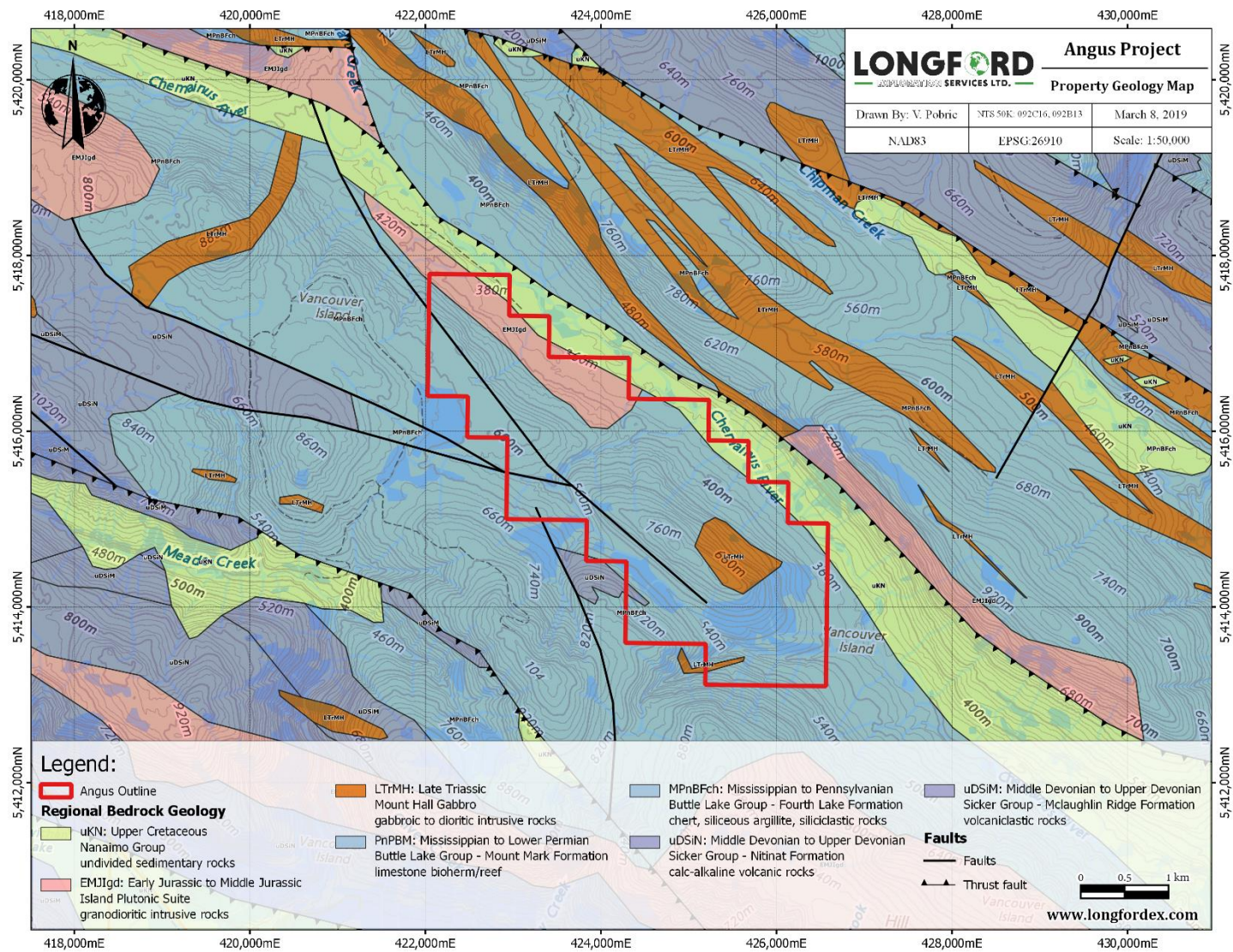


Figure 7.4: Angus property geology.

## 8 Deposit Types

### 8.1 Cu-Au Porphyry Style Deposit

The Angus Property is likely associated with a widespread hydrothermal Cu-Au porphyry style deposit (Figure 8.1). The mineralized zones are believed to be located within volcanoclastic, sedimentary and intrusive rocks on the property.

The formation of this style of deposit is related to orogenic belts at convergent plate boundaries (subduction-related magmatism), or extension settings related to strike-slip faulting or back arc spreading during continent margin accretion. It is generally recognised that Cu-Au-Mo porphyry deposits are associated with granodiorite, quartz monzonite, quartz diorite granitoid rock types. Cu-Au-Mo porphyries tend to occur as large zones of hydrothermally altered host rock and are closely related to island-arc volcano-plutonic suites. Composition of intrusions range from basalt-andesite volcanic and gabbro-diorite-quartz-diorite associations. These deposits are characterized by quartz stockworks, veins, sulphide bearing veins (pyrite, chalcopyrite, bornite, with lesser molybdenum), closely spaced fractures and fracture selvages. These subvolcanic intrusions are commonly emplaced by multiple successive intrusive phases and a wide variety of breccias. Grain size may range from coarse-grained phaneritic to porphyritic.

The timing of gold mineralization within these systems can be early or late and is related to magmatic or circulating meteoric waters. Early gold mineralization is closely associated with the potassic alteration zone and bornite and late mineralization is associated with pyrite and either sericitic, advanced argillic or skarn-destructive argillic alteration (Gendall, 1994). These deposits may be present in stockwork veins, skarns, or as carbonate and non-carbonate replacement (Gendall, 1994). Copper-gold style porphyries tend to be smaller in size compared to copper-molybdenum style porphyries (Gendall, 1994). Regional structures and structural lineaments act as mineralization controls in these systems and therefore the degree of fracturing and veining tends to favour the concentration of Cu and Au in these areas (Gendall, 1994).

Mineralized zones occur at depths of 1 km or less and are mainly associated with the development of brecciated zones or preferential replacement in host rocks with a high degree of primary permeability. Ore-grade stockworks are linked to zones of intensely developed fractures that are coincident or intersect multiple fracture sets. Propylitic alteration halo is widespread and generally surrounds an early potassic alteration core (which is commonly well-mineralized). Overprinting of early mineralization by younger mineralized phyllic alteration is also common. Pyrite is typically the predominant sulphide mineral, and the predominant ore minerals are chalcopyrite, molybdenite, lesser bornite and rare (primary) chalcocite. Subordinate minerals include tetrahedrite/tennantite, enargite and minor gold, electrum and arsenopyrite.

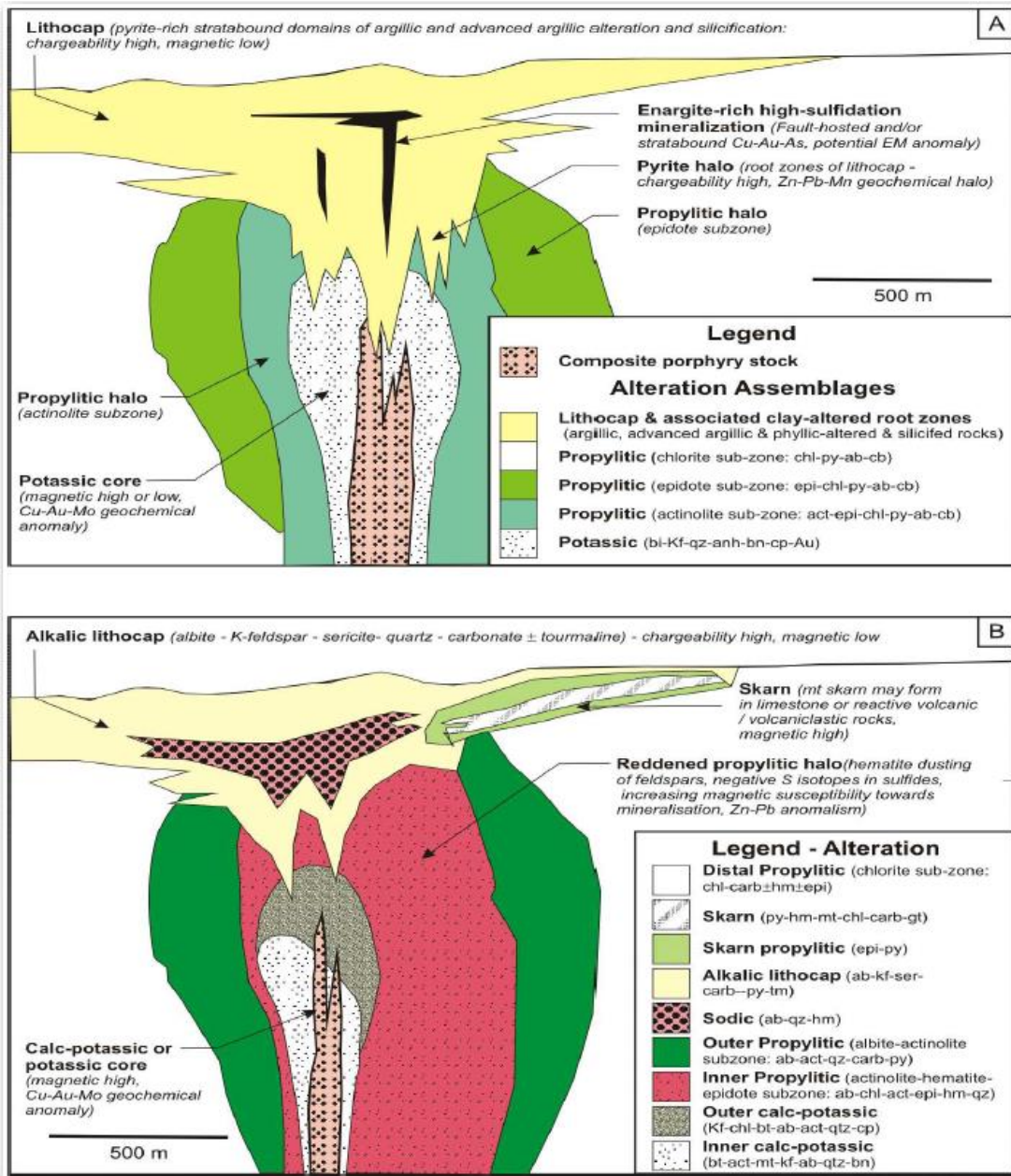


Figure 8.1: Zoned porphyry system model after Holliday and Cooke, 2007.

## 9 Exploration

### 9.1 2019 Site Visit

Longford Exploration Services Ltd. (Longford,) at the request of Kootenay Zinc Corp., executed an exploration program on the Angus Property from September 27<sup>th</sup> to the 29<sup>th</sup>, 2019. The work included prospecting, rock sampling as well as a small geochemical soil grid over an area of interest in the southern portion of the property. The crew consisted of four people mobilizing each day from Chemainus via the Chemainus River forest accesses road held by Island Timberlands, part of the Mosaic Forest Management Group. The Island Timberland gate restricted access from 4 km onwards on the Chemainus Main so the program took place from 6 am to 4 pm on the 28<sup>th</sup> and 29<sup>th</sup> when the gate was open to the public. Gaining access outside of this time frame is under negotiations.

Historical anomalies that merited further investigation were sought-out and prospected to assess their mineral potential. Multiple anomalous-gold soil and rock sample locations were prospected for in outcrop, visual mineralization, and potential drill sites. 39 rock grab samples were collected throughout the property and 53 soil samples were collected over a grid 50 m X 50 m grid in the southern portion of the property. GPS locations, and relevant assay results are listed in Table 9.1 and 9.2 and assay certificates are found in APPENDIX F and G. A map of traverse paths and sample locations are illustrated in Figure 9.1 and 9.2.

Note: 1 rock sample (3293522) was omitted from results and maps as the sample was collected approximately 70 m outside the property boundary.

### 9.2 2019 Exploration Field Program

A prospecting and sampling program were carried out from Sept 27<sup>th</sup> to Sept 29<sup>th</sup>, 2019 over the much of the Angus property. The program was a first pass exploration program designed to assess the property's potential for gold and copper mineralization. A total of 39 rock and 53 soil samples (including 2 duplicates) were collected during the program which are further described in APPENDIX B and C.

Prospecting activities focused on locating mineralization, particularly near the Cow 11 Showing in an area surrounding a gossanous diorite where previous work (BC Minfile 092C 190) reported a sample returning values of 13,000 ppb Au, 14.7 ppm Ag, 3,376 ppm Cu and 433 ppm As. Prospecting was also carried out near the Cow 14 Prospect ( BC Minfile 092C 192) which reported values of 29.4 g/t Ag, 13.03 g/t Au, 0.55% Pb and 0.238 % Zn within a 5 to 20 cm wide vein located in a shear zone. Historic reports indicate that the vein was well mineralized in pyrite with lesser amounts of pyrrhotite, galena, sphalerite and chalcopyrite.

As the property is overlain with thick glacial till and very little outcrop a 50 m X 50 m soil sampling grid was the preferred sampling medium to assess any hidden mineralization within the property boundaries.

### 9.3 2019 Rock and Soil Sample Results

Tables 9.1 below outlines the geochemical rock (grab) results and Table 9.2 below outlines the geochemical soil results returned from the 2019 preliminary survey performed on the property. These results are illustrated in Figures 9.1 to 9.16 below. Maps outlining rock and soil sample IDs, locations, and results are also available in APPENDIX H and I.

Table 9.1: Angus property 2019 rock sample coordinates and assay results (NAD83 Zone 10N).

Sample ID	Easting	Northing	Elevation (m)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Ag (ppm)	Au (ppm)	Ba (ppm)
3293501	425795	5414534	538	76.6	2.8	84	0.05	0.00025	278
3293502	424958	5415659	400	252.5	1.7	155	0.5	0.0053	4
3293503	424961	5415658	400	272.9	0.9	70	0.2	0.0096	14
3293504	424959	5415658	399	214.2	0.9	68	0.1	0.0204	10
3293505	424912	5415724	399	325.8	1.4	50	0.2	0.0238	12
3293506	424902	5415725	398	73.9	25.7	45	0.05	0.062	6
3293507	424957	5415657	395	117.5	1.7	47	0.05	0.0023	28
3293508	423637	5415931	507	109.7	2.1	66	0.05	0.003	21
3293509	422977	5416727	429	5.6	2.6	26	0.05	0.0011	50
3293510	422977	5416730	429	135	2	45	0.05	0.0031	24
3293511	422980	5416722	429	80.6	1.7	35	0.05	0.0014	55
3293512	422982	5416734	434	142.2	4.3	31	0.2	0.0034	9
3293513	422982	5416730	434	757.8	1.9	61	0.7	0.0094	35
3293514	422979	5416735	436	396.6	1.4	37	0.3	0.0205	33
3293515	422074	5417557	496	93.9	2.2	34	0.1	0.0027	3
3293516	422072	5417559	496	82.1	1.3	25	0.1	0.0019	28
3293517	422069	5417560		84.1	2	43	0.1	0.0018	2
3293518	422080	5417553	495	229.6	2.1	17	0.5	0.0199	15
3293519	422084	5417554	496	142.6	1.6	31	0.2	0.0024	24
3293520	422085	5417548	494	222	2.3	20	0.4	0.0084	14
3293521	425591	5413855		86.9	2.8	28	0.1	0.0023	16
3293522	421975	5417576	497	42.6	4.5	48	0.05	0.0021	102
3293523	422091	5417551	493	192	3	41	0.2	0.0052	103
3293524	422287	5417404	479	283.8	2.1	29	0.4	0.0115	27
3293525	422344	5417368	475	203.4	1.6	23	0.2	0.005	18
3293526	422447	5417306	463	114.6	1.7	42	0.2	0.0057	16
3293527	422773	5416993	470	486.4	1.9	30	1.5	0.0163	24
3293528	422786	5416986	464	2241.1	9.3	144	1.5	0.0355	32
3293529	422780	5416985	464	1653.3	4.8	85	2.7	0.0389	17
3293851	422920	5416613	479	85.3	2.2	37	0.2	0.0155	11
3293852	424695	5415788	431	757.3	16.7	51	1.8	0.0434	56
3293853	424697	5415789	431	139.5	3.6	90	0.2	0.0104	202
3293854	424693	5415788	430	299.8	14.9	114	2.2	0.0757	26
3293855	424700	5415786	431	542.7	4.5	75	1.6	5.6	146
3293856	424701	5415785	430	122.2	6.3	103	0.4	0.0083	327
3293857	424700	5415785	430	1289.3	17	53	10.4	19.2	34
3293858	424701	5415785	429	894.4	14.7	76	6.4	14.5	78
3293859	424703	5415784	427	1139.8	111.9	99	35.7	27.1	59
3293860	424708	5415780	427	68.8	4.2	83	0.1	0.018	193

Table 9.2: Angus property 2019 soil sample coordinates and assay results (NAD83 Zone 10N).

Sample ID	Easting	Northing	Elevation	Cu (ppm)	Pb (ppm)	Zn (ppm)	Au (ppb)	Ba (ppm)
3293651	425160	5413806	552	18.4	12	29	68.1	43
3293652	425156	5413849	537	95.1	5.4	69	22.6	131
3293653	425153	5413902	541	100	8.5	69	9	86
3293654	425152	5413950	573	92.7	5.3	72	37.8	59
3293655	425152	5413998	583	37.7	12.5	54	4.6	45
3293656	425150	5414048	593	60.6	9.7	92	8.8	55
3293657	425150	5414100	608	72.9	9.7	77	7.3	68
3293658	425152	5414149	622	91.1	6.8	87	7	52
3293659	425151	5414196	637	80.9	8.2	60	17.8	51
3293660	425252	5414001	597	111.1	6.7	96	11.5	62
3293661	425302	5414000	602	105.9	6.7	77	39	72
3293662	425346	5414001	612	168.6	11.2	87	24.2	122
3293663	425403	5414000	618	126.2	7.8	88	20.6	121
3293664	425453	5413999	626	96	9.7	81	20.3	75
3293665	425505	5414001	632	67.9	11.2	80	4.5	72
3293666	425552	5413998	635	54.4	11.2	88	6.8	82
3293667	425603	5413999	634	73.4	10.6	88	5.2	69
3293668	425253	5413951	580	60.2	9.5	70	209.9	55
3293669	425302	5413948	586	28.3	9.8	54	3.3	39
3293670	425306	5413954	586	43.1	13.2	70	42.5	48
3293671	425353	5413946	592	75.4	7.3	65	16.8	61
3293672	425404	5413947	598	86.3	7.3	89	34.9	73
3293673	425399	5413897	584	86.7	7.5	100	14	77
3293674	425350	5413899	580	113.3	12.5	87	16.2	56
3293675	425303	5413900	572	130.7	7.4	80	12.1	55
3293676	425251	5413902	565	128.1	8.1	91	70.6	60
3293751	425198	5413800	545	92.4	5.7	73	5.3	107
3293752	425201	5413857	548	126.2	5.3	76	32.5	107
3293753	425204	5413901	565	85.9	6.8	56	12.6	39
3293754	425200	5413953	573	72.4	5.8	90	9.7	63
3293755	425202	5413998	583	111.8	7.1	80	21.2	52
3293756	425206	5414050	603	52.6	6.5	54	9.9	44
3293757	425204	5414099	617	85.1	7.1	78	39.9	73
3293758	425204	5414146	631	170.5	7.3	99	27.5	172
3293759	425203	5414198	646	152.6	6.7	95	23.5	119
3293760	425249	5414098	625	106.8	6.7	75	9.5	75
3293761	425249	5414052	614	84	6.8	137	8.3	57
3293762	425301	5414047	617	120.4	4.7	82	9.2	68
3293763	425345	5414058	629	184.9	5.5	79	28.6	186
3293764	425404	5414049	637	148.2	5.5	81	9.7	63
3293765	425442	5414052	645	136	12.8	92	245.2	93
3293766	425497	5414060	656	167	11.3	81	47.8	107
3293767	425546	5414066	658	99.1	5.5	62	12.9	108

<b>Sample ID</b>	<b>Easting</b>	<b>Northing</b>	<b>Elevation</b>	<b>Cu (ppm)</b>	<b>Pb (ppm)</b>	<b>Zn (ppm)</b>	<b>Au (ppb)</b>	<b>Ba (ppm)</b>
3293768	425601	5414049		123.4	9.6	139	10.7	65
3293769	425592	5413951	615	46.8	5.3	71	11.7	54
3293770	425556	5413946	612	68.3	22	89	6.3	77
3293771	425504	5413951	613	92.4	9.4	85	22.9	71
3293772	425504	5413951	613	81.6	11.3	93	16.6	77
3293773	425450	5413943	608	141.1	12.7	77	15.6	110
3293774	425452	5413897	587	46	18.1	37	3.7	60
3293775	425497	5413903	595	116.2	12.9	78	102.9	97
3293776	425554	5413898	594	52.4	11.7	91	1.8	76
3293777	425599	5413896	593	67.8	24.5	80	5.3	113

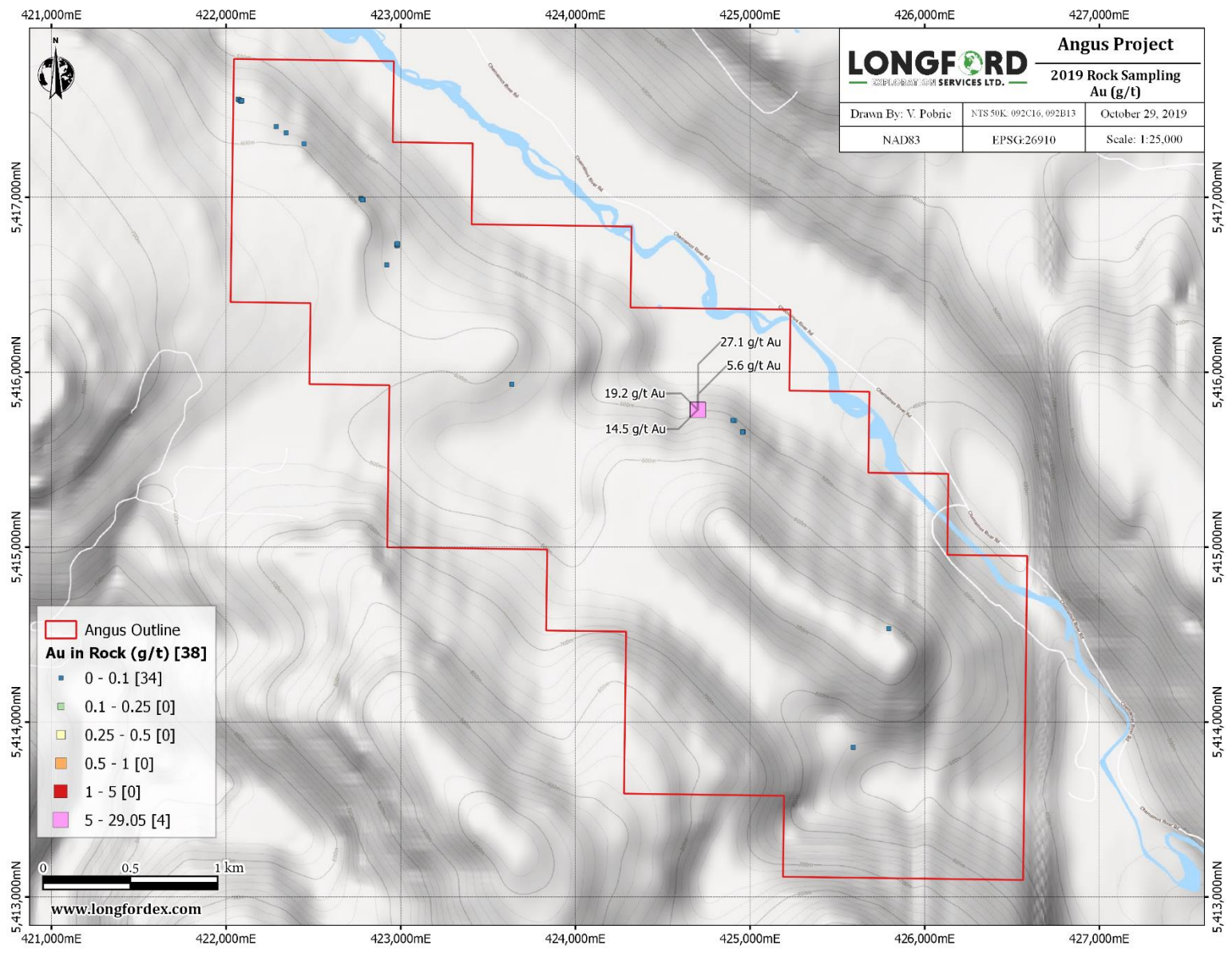


Figure 9.1: 2019 Angus property Au in rock results (g/t).

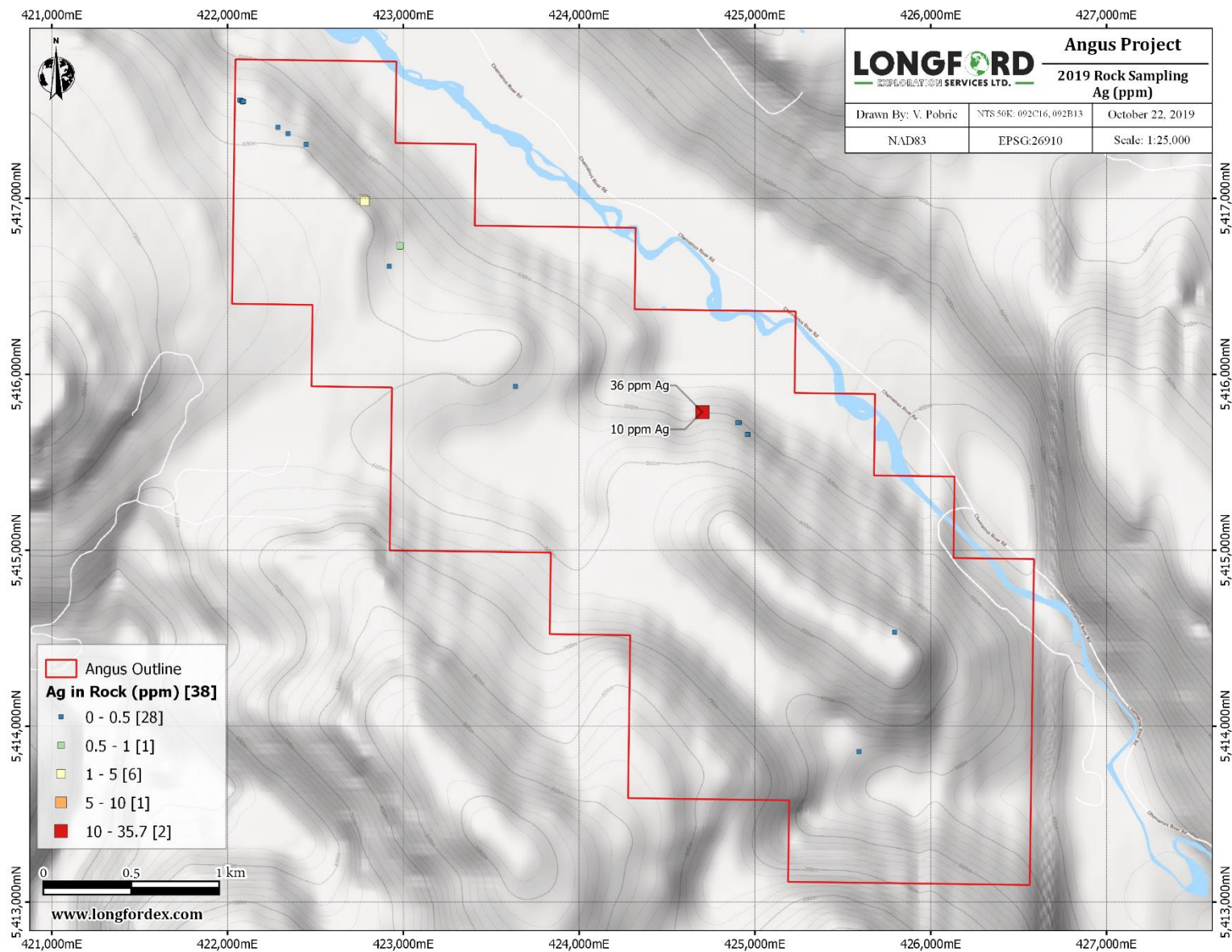


Figure 9.2: 2019 Angus property Ag in rock results (ppm).

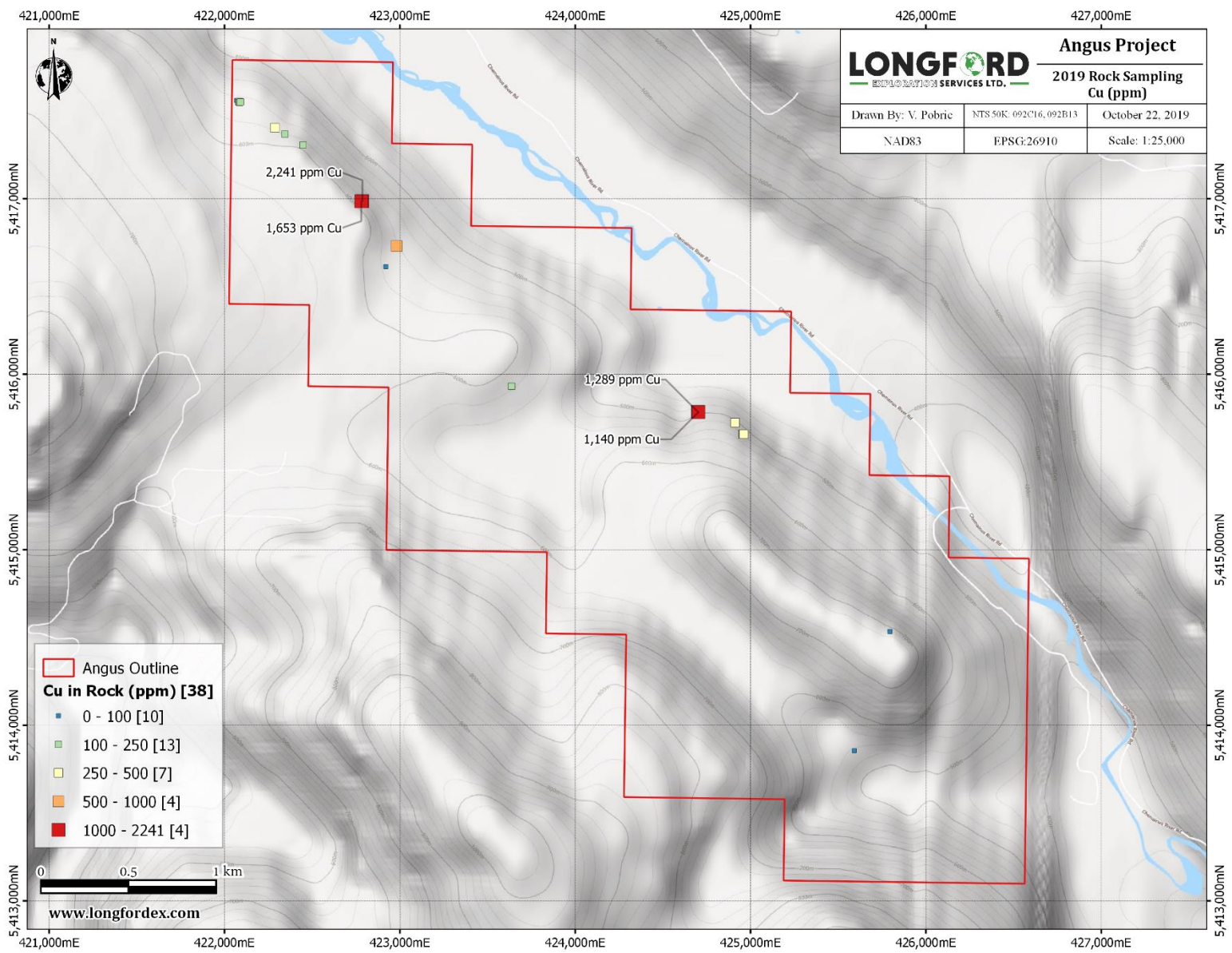


Figure 9.3: 2019 Angus property Cu in rock results (ppm).

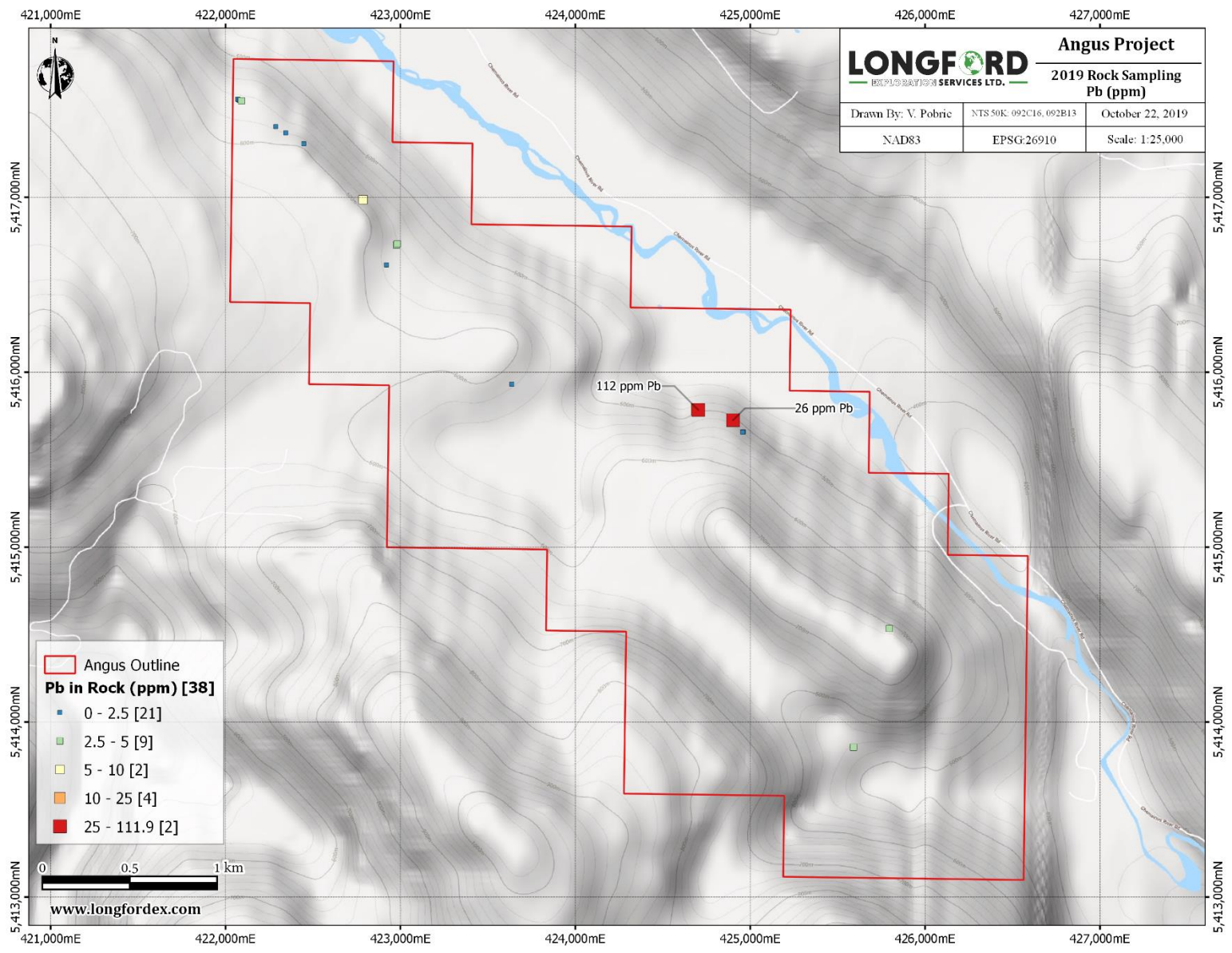


Figure 9.4: 2019 Angus property Pb in rock results (ppm).

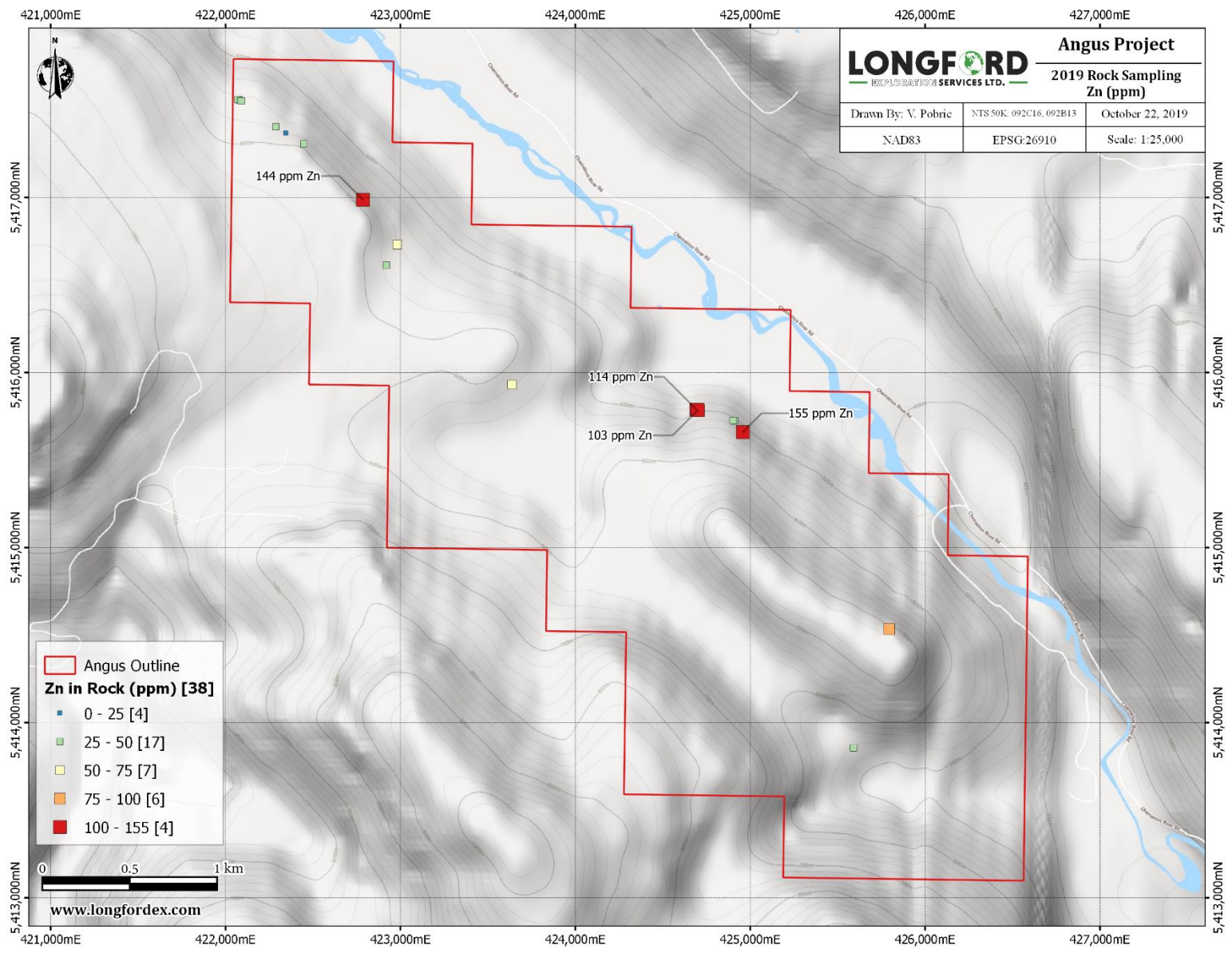


Figure 9.5: 2019 Angus property Zn in rock results (ppm).

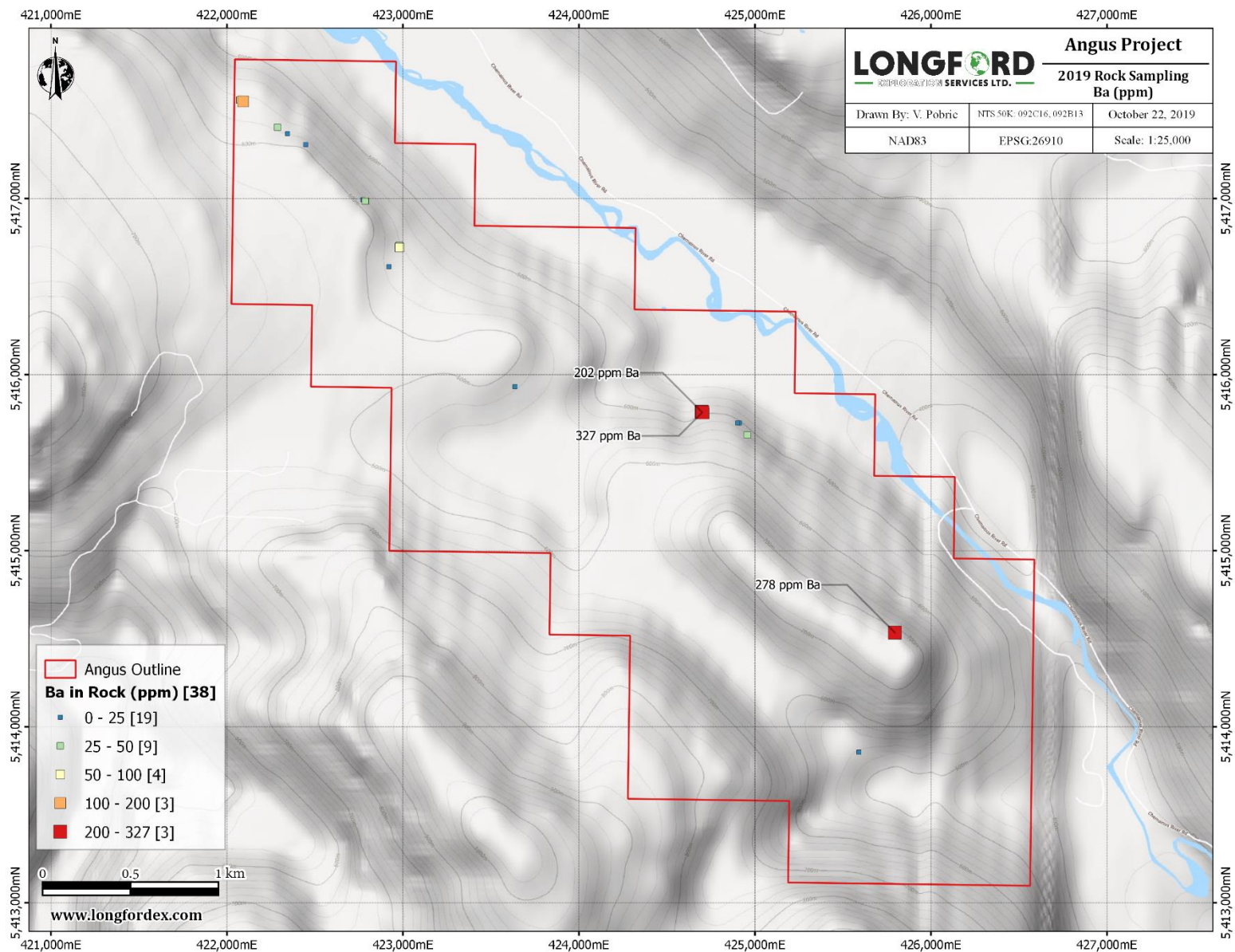


Figure 9.6: 2019 Angus property Ba in rock results (ppm).

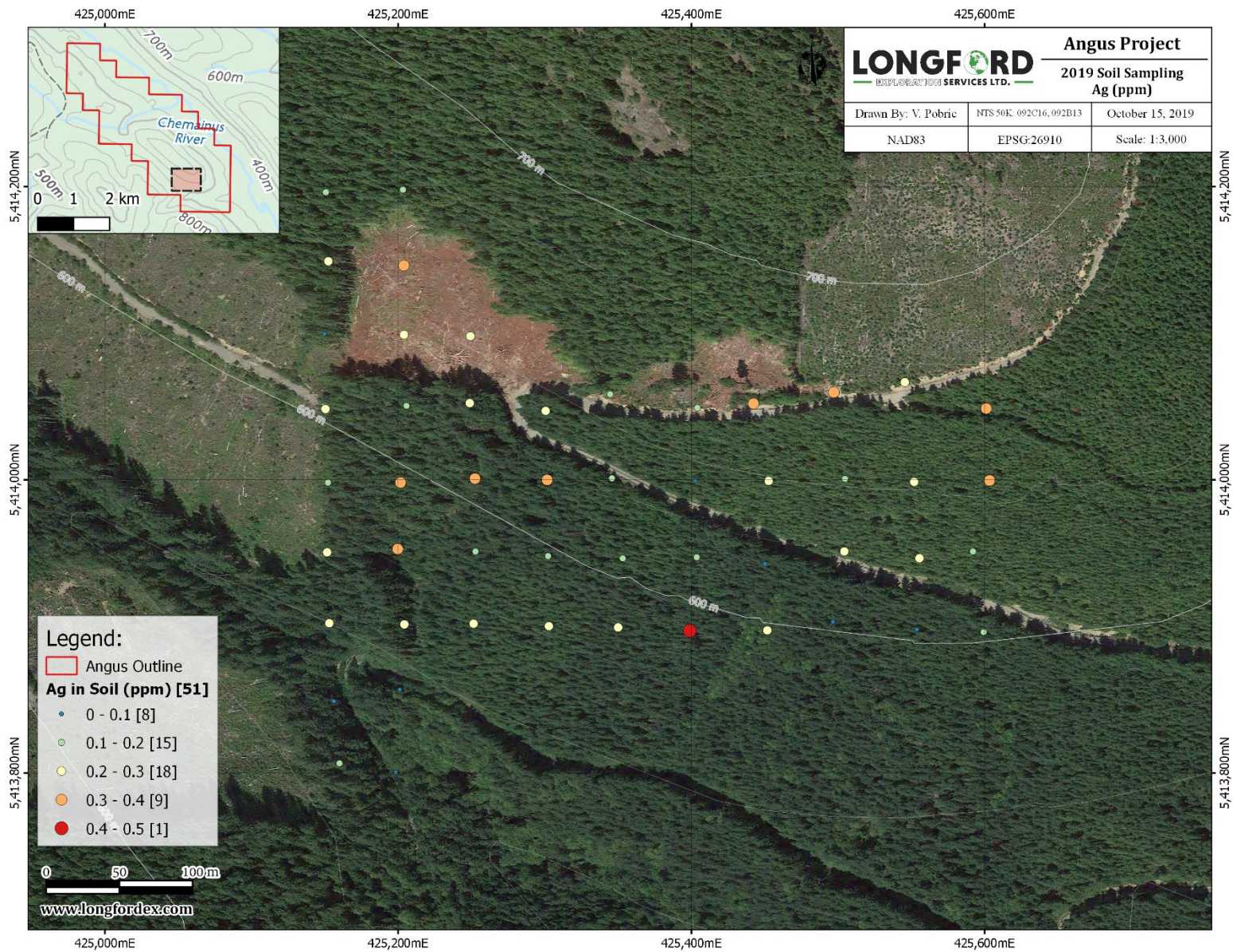


Figure 9.7: 2019 Angus property Ag in soil results (ppm)-Satellite.

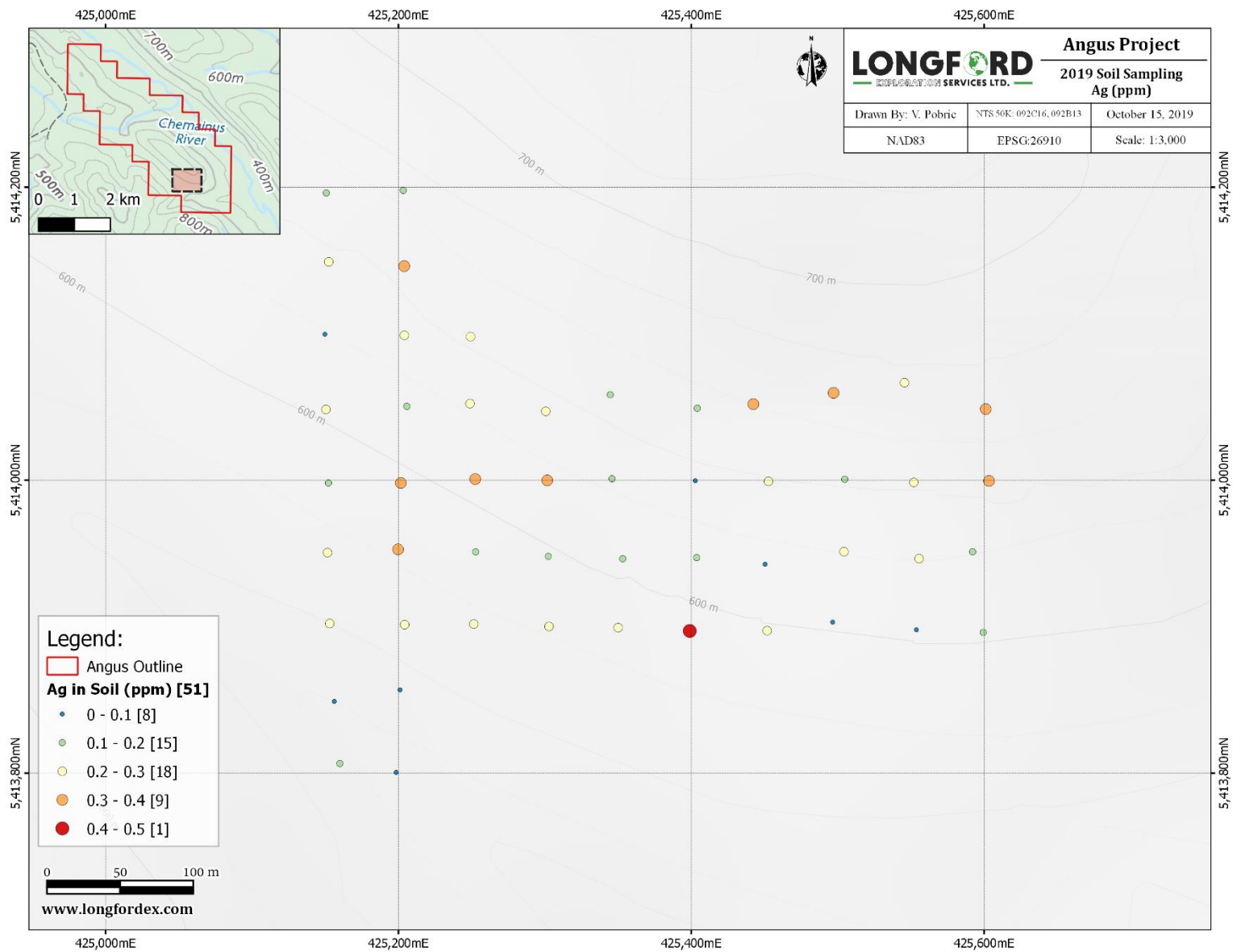


Figure 9.8: 2019 Angus property Ag in soil results (ppm).

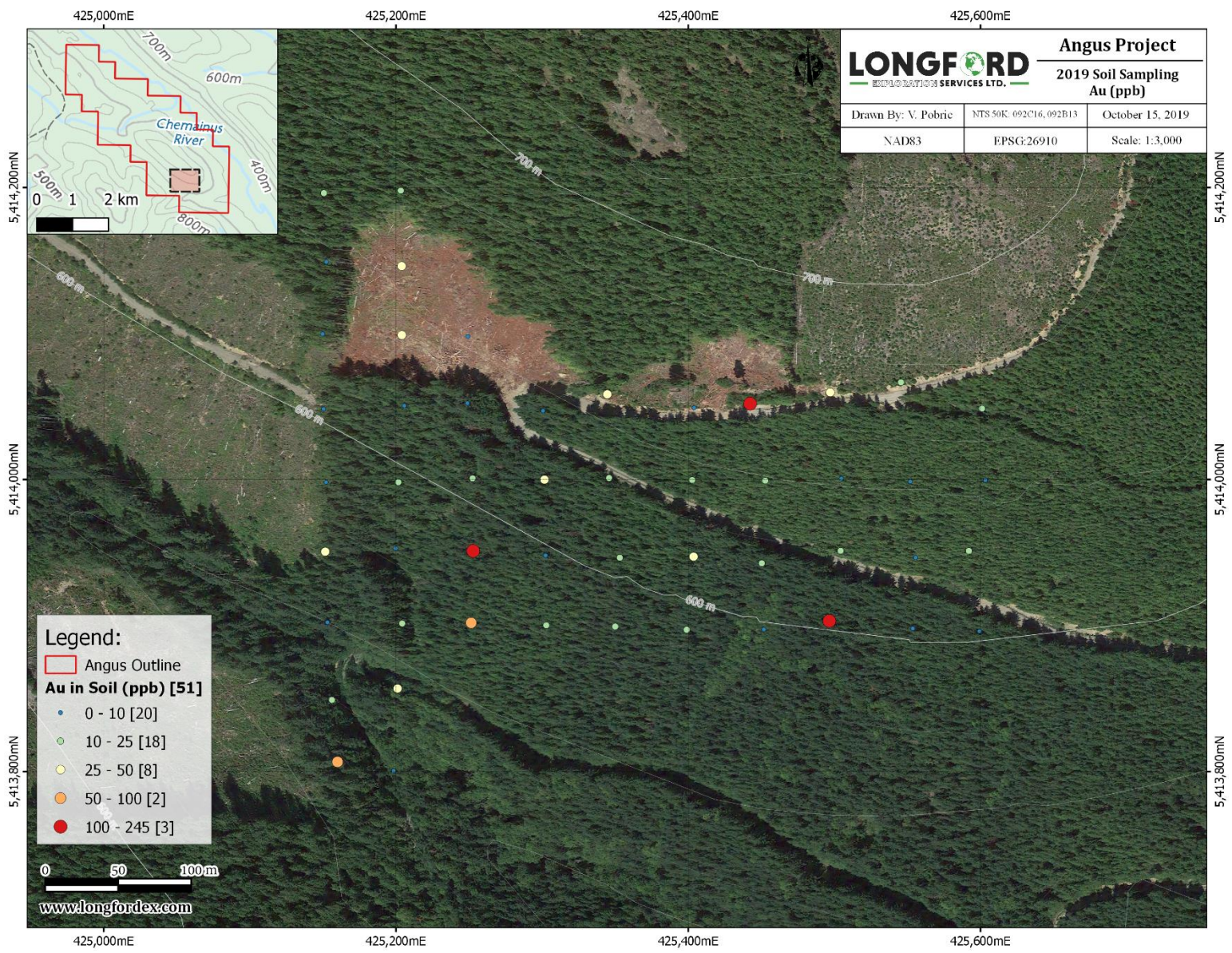


Figure 9.9: 2019 Angus property Au in soil results (ppb)-Satellite.

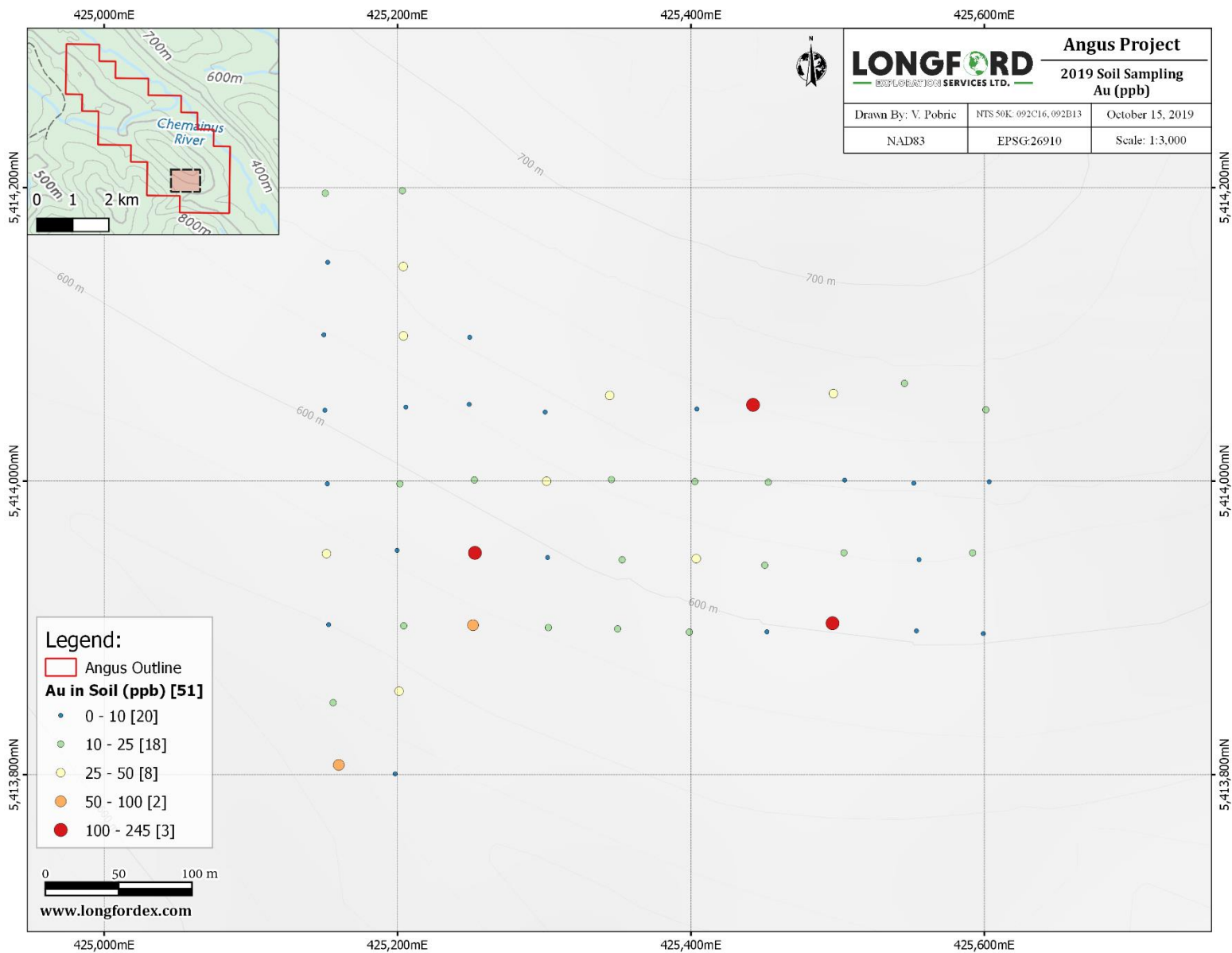


Figure 9.10: 2019 Angus property Au in soil results (ppb).

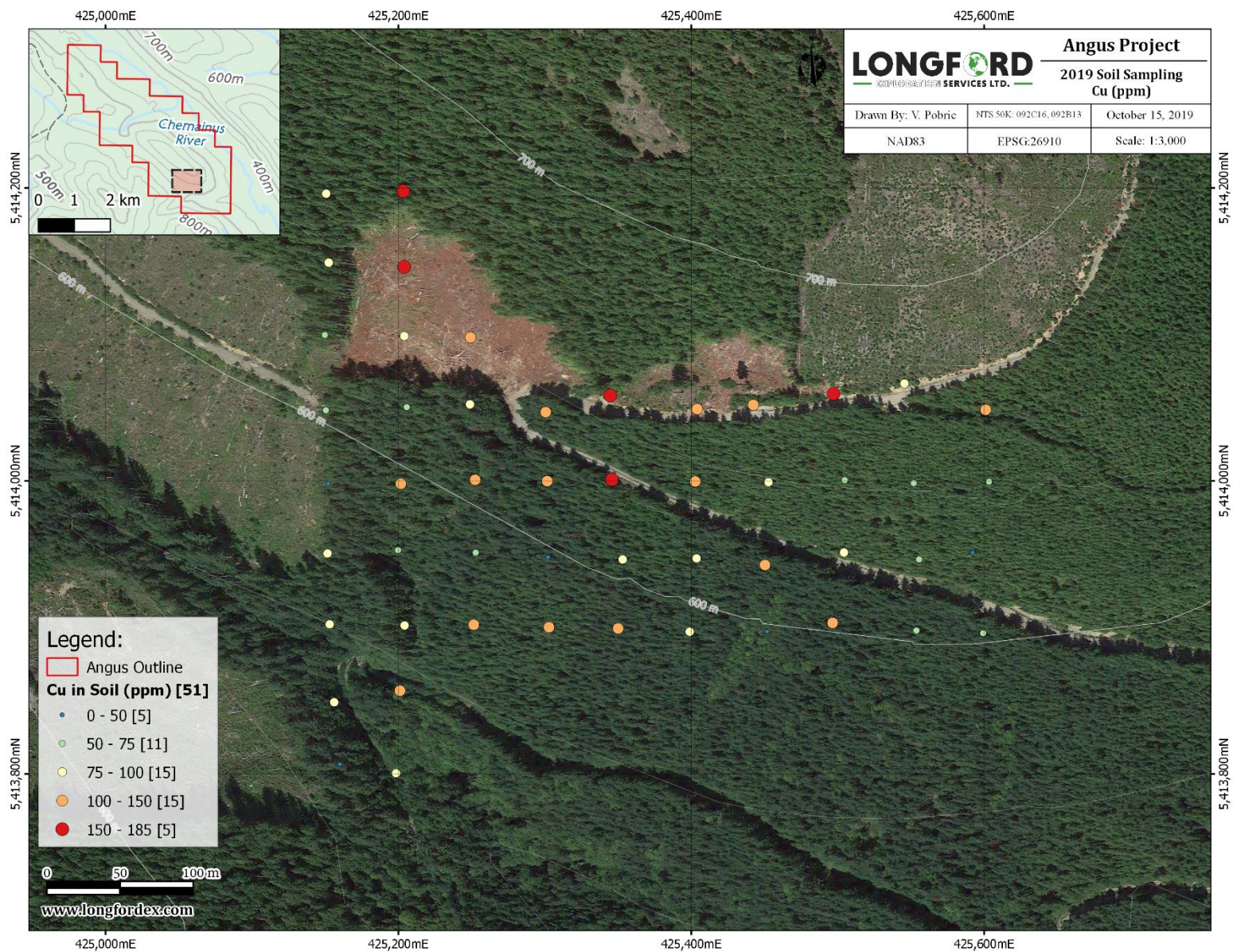


Figure 9.11: 2019 Angus property Cu in soil results (ppm)-Satellite.

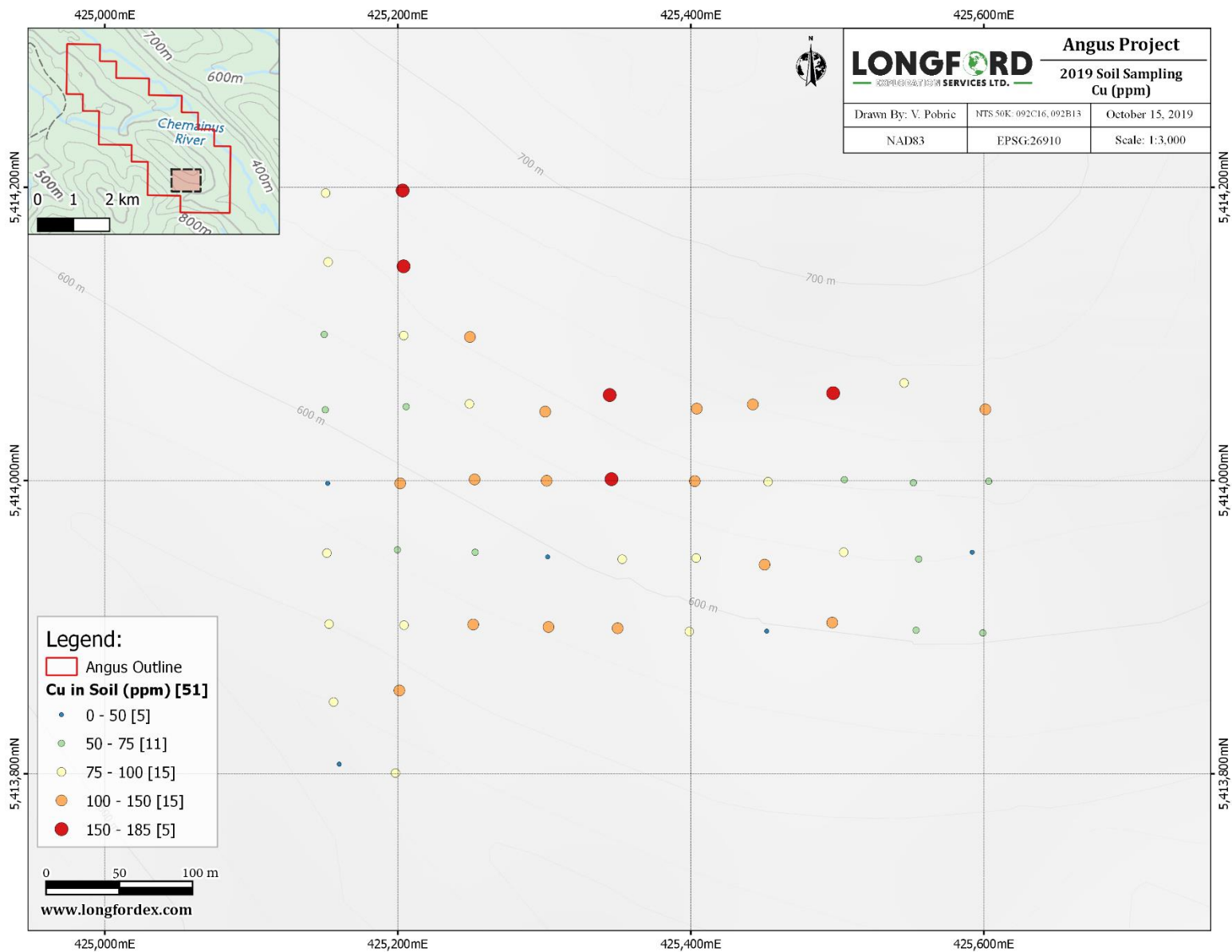


Figure 9.12: 2019 Angus property Cu in soil results (ppm).

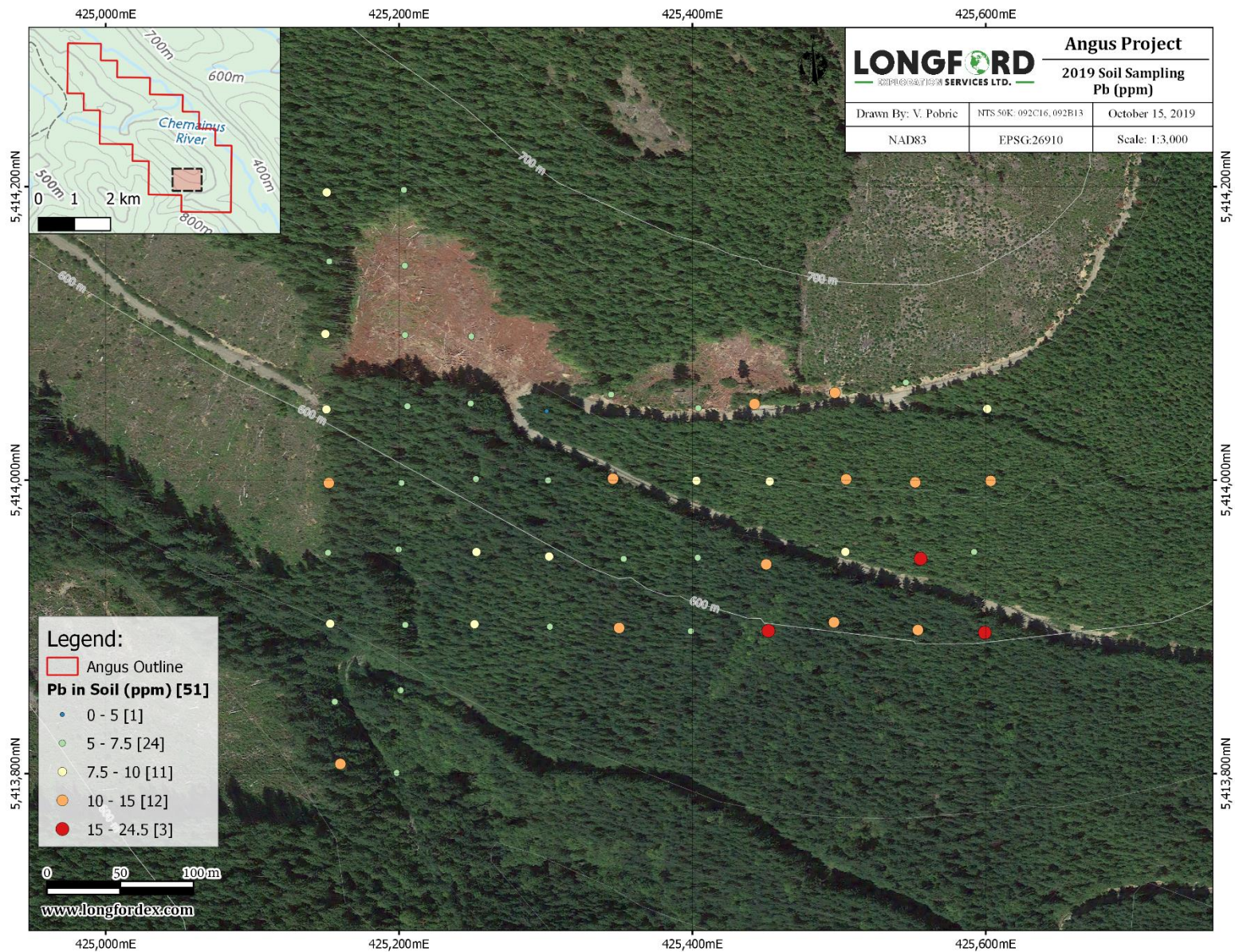


Figure 9.13: 2019 Angus property Pb in soil results (ppm)-Satellite.

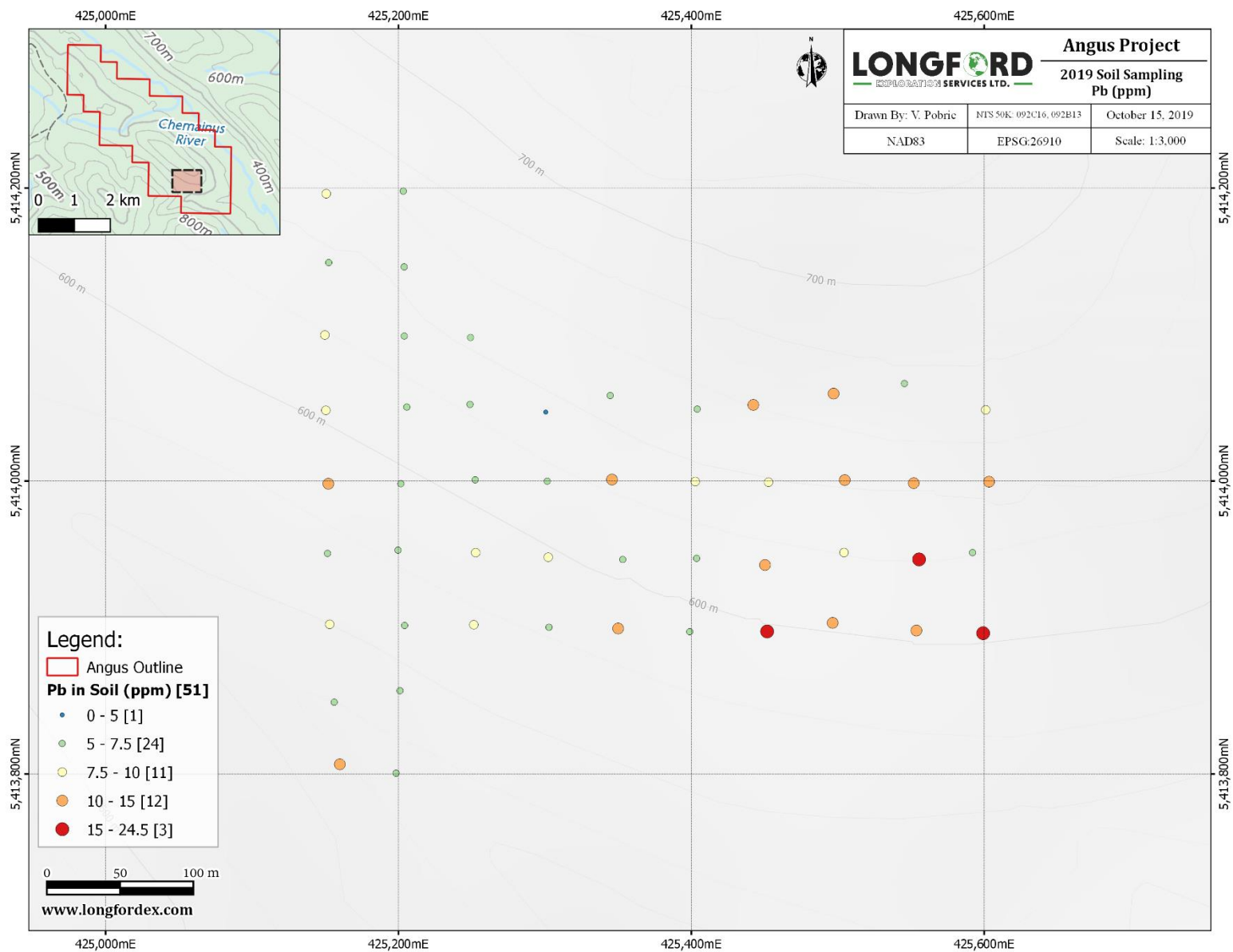


Figure 9.14: 2019 Angus property Pb in soil results (ppm).

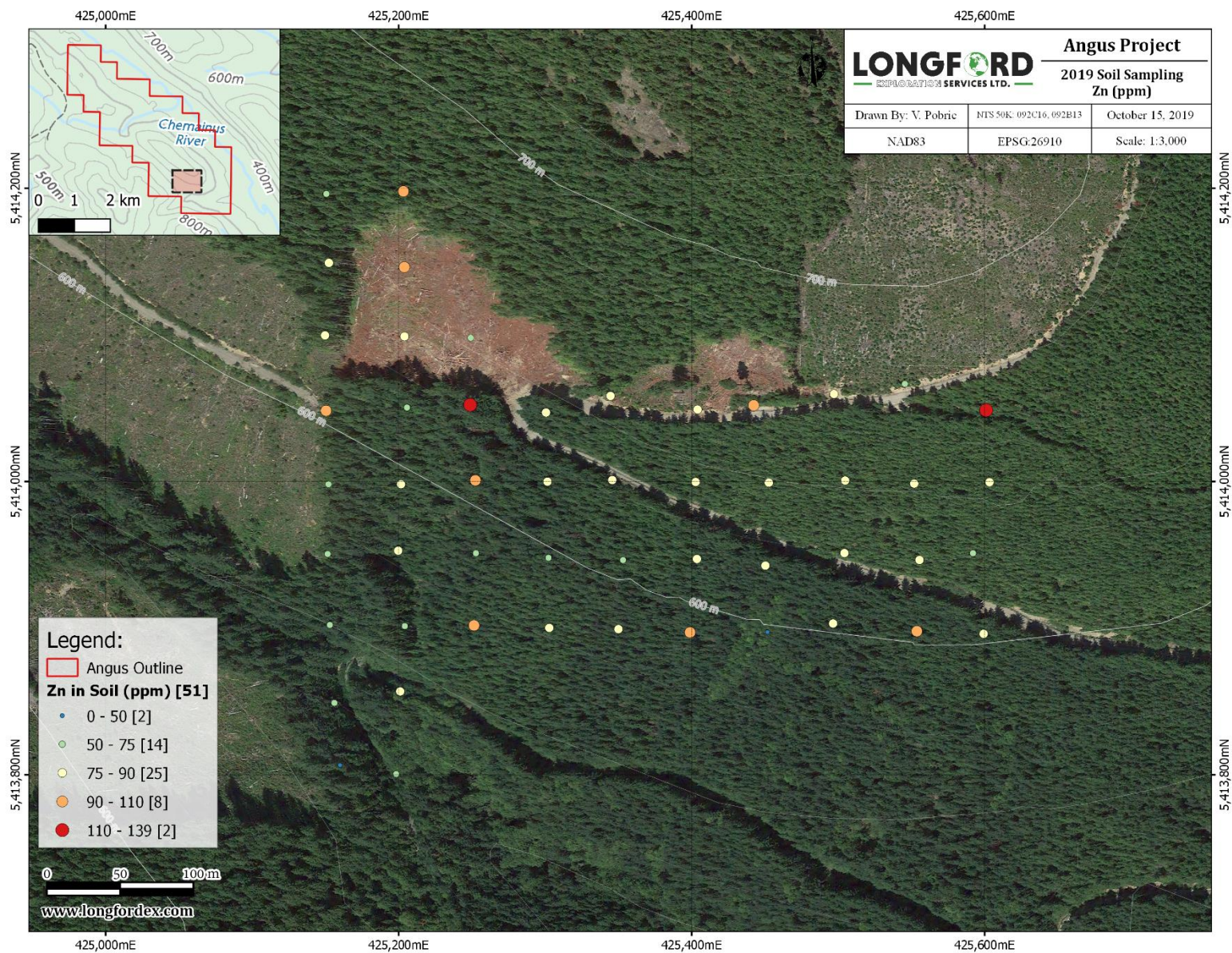


Figure 9.15: 2019 Angus property Zn in soil results (ppm)-Satellite.

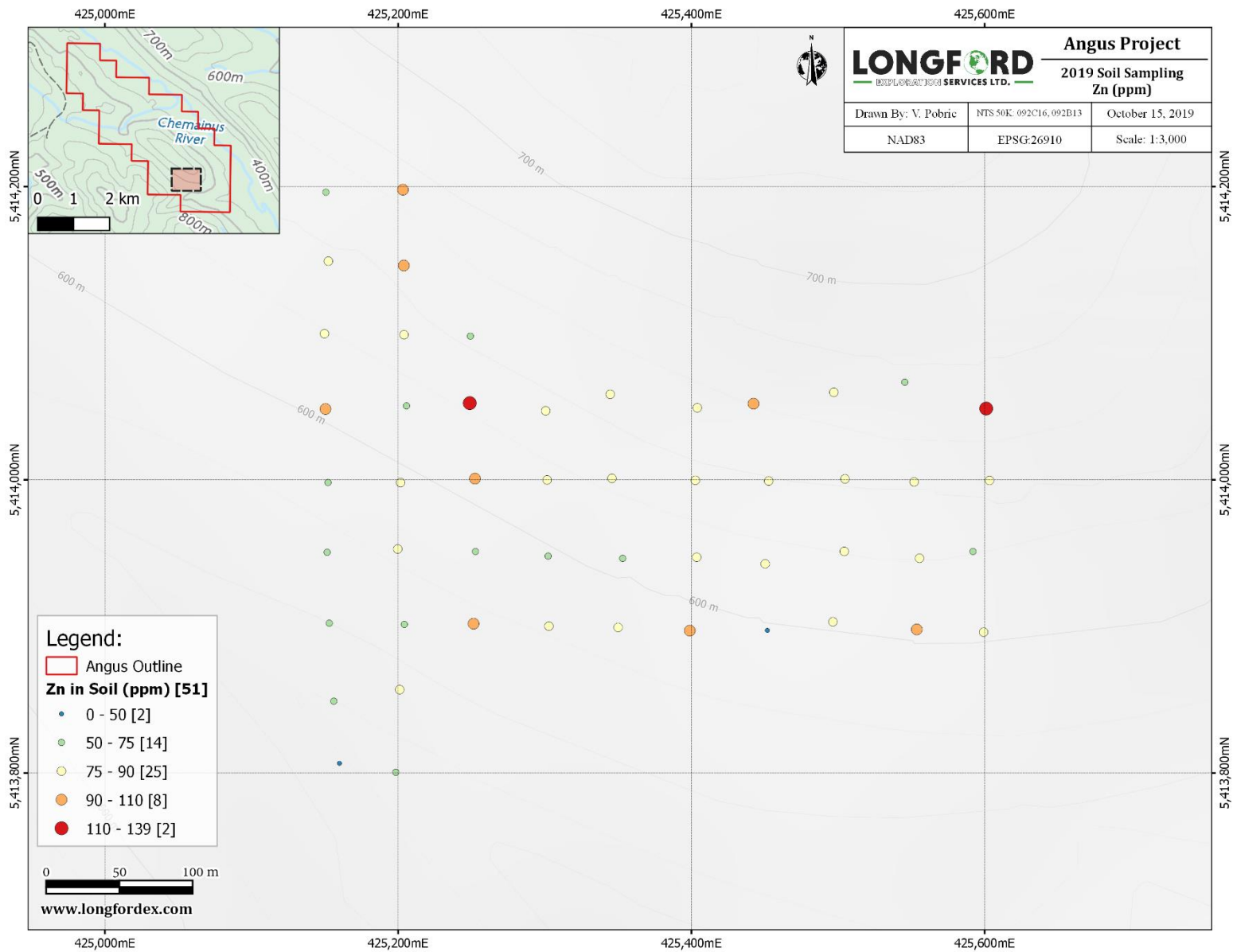


Figure 9.16: 2019 Angus property Zn in soil results (ppm).

## 9.4 Statement of Costs

The following table describes the costs of the work program which are eligible for assessment credit. The amount being applied for is \$30,031.73. The full invoice can be viewed in Appendix A.

Table 9.3: Statement of costs for 2019 Angus property exploration program.

Dates	Item Description	Units	Cost/Unit	Total
Sept 27 to 29, 2019	Project Manager- J. Rogers	3	\$800	\$2,400
Sept 27 to 29, 2019	Senior Geologist	3	\$700	\$2,100
Sept 27 to 29, 2019	2 Geologists	6	\$500	\$3,000
Sept 27 to 29, 2019	Food	9	\$75	\$ 675
Sept 27 to 29, 2019	Lodging	9	\$150	\$1,350
Sept 27 to 29, 2019	Truck (1 ton with safety and recovery gear)	3	\$150	\$450
Sept 27 to 29, 2019	Fuel (per km)	500	0.65	\$325
Sept 27 to 29, 2019	Electronics Kit	9	\$25	\$225
Sept 27 to 29, 2019	Chainsaw (safety kit with chaps and helmet)	3	\$25	\$75
Sept 27 to 29, 2019	Mobile XRF	3	\$176	\$528
Sept 27 to 29, 2019	Field/Office Consumables	9	\$30	\$270
Sept 27 to 29, 2019	Mobilization-BC Ferries	2	\$150	\$300
Sept 27 to 29, 2019	Analysis-Rock (ICP-MS)	39	\$34.85	\$1,359.15
Sept 27 to 29, 2019	Analysis Soil	53	\$30.45	\$1,613.85
Sept 27 to 29, 2019	Sample Shipping	1		\$200
July 2019	Pre-field data compilation/GIS	1	\$5,000	\$5,000
Oct 2019	Post field-Assessment report and maps.	1	\$5,000	\$5,000
	<b>Estimated Sub Total</b>			<b>\$24,871</b>
	Management Fee (15% of Est. Sub Total)			\$3,730.65
	<b>Sub Total</b>			<b>\$28,601.65</b>
	GST (@ 5%)			\$1,430.08
	<b>Total</b>			<b>\$30,031.73</b>

## 10 Sample Preparation, Analysis, and Security

### 10.1 Sampling Procedure

During the 2019 programs a total of 39 rock samples and 53 soil samples were collected. These samples were collected to enable detailed descriptions out of the field and were secured in a manner where sample integrity and provenance was maintained for future analytical procedures.

Rock samples collected were located by GPS in NAD83 UTM Zone 9N, the sample location was recorded in field notebooks, an assay sample tag book and as a waypoint on a Garmin 60CSX GPS unit. Each sample was collected into its own 18" x 12" poly bag labeled with the locale (i.e. "Angus") and a unique 7-character sample ID (i.e. E6690306) assigned from a barcoded Tyvek sample book. A tear-out tag with the barcode and unique sample ID was inserted in the bag with the sample and the bag was sealed with a cable tie in the field. The sample locations are marked in the field with orange flagging tape and the unique sample ID number written on the flagging tape.

A similar process was carried out for recording the soil sample data however soils were collected carefully by following strict guidelines. The grid soil sampling program that was carried out collected 53 soil samples at 50 m intervals with a 50 m line spacing. All sample locations were recorded using a hand-held GPS unit. Sample sites were marked using aluminum tags labelled with the sample number affixed to a 50 cm wooden lath that was driven into the ground. The majority of soil samples were collected from 40 to 60 cm deep holes using hand-held geo-tools. Each soil sample was placed into individually labelled Kraft paper bags.

### 10.2 Chain of Custody

The Longford Exploration Crew maintained custody of all samples until they were shipped to Bureau Veritas Laboratories in Vancouver, BC.

### 10.3 QA/QC

Longford Exploration Services applies a high-level QA/QC program for early stage exploration programs. A duplicate soil sample is collected every twentieth sample. Pulp duplicates and high-grade copper standards prepared and analyzed by the lab show a less than 0.8% variability.

More comprehensive QA/QC procedures are applied to larger systematic sampling programs.

### 10.4 Sample Analysis

Sample analysis has been carried out by Bureau Veritas at its Vancouver location which is ISO/IEC 17025:2005 and ISO 9001:2015 certified and independent of the issuer.

The analysis methods requested from the lab for the samples collected in the 2019 field exploration program are set out below:

*Table 10.1: Analytical methods requested from Bureau Veritas Laboratory.*

Analytical Methods	
Analysis – Rock	PRP70-250, AQ200, FA530-Au,
Analysis – Soil	SS80, AQ200

Standard preps were chosen for the rock and soil samples. A multi acid digestion (ICP-ES/MS - AQ200) analysis was chosen as it gives near total values for all the elements of interest. Over limits of gold were re-analyzed by fire assay FA530-Au.

### **10.5 Adequacy of Procedures**

All sample collection and analysis performed by the Longford Exploration field crew are in general conformance with industry best practices and are in accordance with typical CIM standards.

### 11 Interpretation and Conclusions

The early stage exploration work at the Angus property has identified new and existing anomalous zones of Cu and Au which warrant further work to define the lateral extent and continuity of mineralization in the area. High grade Cu and Au samples collected from the property hosted highest concentration of mineralization within miniscule stringers to 5 cm thick massive sulphide veins within argillite.

As seen in Table 11.1 below, numerous samples returned anomalous values for Au, Ag, Cu, Mo; and 15 rock samples and 53 soil samples returned anomalous values for As, a well-known gold pathfinder element.

Table 11.1: Angus 2019 exploration program samples which fall within the anomalous range (ppb/ppm).

Element	Crustal Abundance	Typical Anomalous Conc in Rock (ppm)	# of Rock Samples within anomalous range	Typical Anomalous Conc in Soil (ppm)	# of Soil Samples within anomalous range
<b>Au</b>	4 ppb	50-100 ppb	6	40-100 ppb	7
<b>Ag</b>	70 ppb	0.5-1 ppm	12	0.2-0.5	45
<b>Cu</b>	55 ppm	100-200	28	50-200	47
<b>Pb</b>	13 ppm	40-100	1	40-100	0
<b>Zn</b>	70 ppm	100-500	4	200-300	0
<b>Mo</b>	1.5 ppm	5 to 20	5	2 to 5	3
<b>W</b>	1.5 ppm	10 to 50	0	2 to 10	0
<b>Ni</b>	75 ppm	100-200	0	100-200	0
<b>As</b>	1.8 ppm	5 to 10	15	5 to 20	53

#### 11.1 Rock Samples

Rock samples collected in the mid-eastern portion of the property showed elevated concentrations of Au, Ag, Cu, Mo, Pb, and Zn as well as elevated concentrations within pathfinder elements (Ba, Hg, As, Sb, and Bi), as seen in Tables 11.2 and 11.3 below. Highest concentrations were localized in this area, with the exception of Cu, which showed highest concentrations in the northern portion of the property, returning a max value of 2,241 ppm Cu. Mineralization predominantly occurs as massive sulphides within a dark-grey, fine-grained, silicified argillite containing quartz-carbonate stringers. However, anomalous concentrations of Cu were also found within siliceous fault material within a highly oxidized, dark to medium grey, fine-grained diorite (2241.1 ppm Cu and 1653.3 ppm Cu). Both the northern and central portion of the property warrant follow-up work.

Table 11.2: Statistical analysis of 2019 Angus exploration program rock pathfinder elements (n=39).

Element	Ba (ppm)	Hg (ppm)	As (ppm)	Sb (ppm)	Bi (ppm)
Mean	55.17	0.318	15.8	0.63	0.79
Median	26.0	0.07	3.7	0.05	0.05
Mode	24.0	0.02	0.8	0.05	0.05
Max	327.0	3.18	271.4	4.80	9.80
Min	2.0	0.005	0.25	0.05	0.05

Table 11.3: Statistical analysis of 2019 Angus exploration program rock results (n=39).

Element	Au (ppm)	Ag (ppm)	Cu (ppm)	Mo (ppm)	Pb (ppm)	Zn (ppm)
Mean	1.715	1.79	370.7	2.70	7.44	57.46
Median	0.009	0.20	192.0	0.70	2.20	47.0
Mode	0.002	0.20	N/A	0.70	1.70	45.0
Max	27.1	35.7	2,241.1	20.10	111.90	155.0
Min	0.00025	0.05	5.6	0.10	0.90	17.0

## 11.2 Soil Samples

Soil samples were collected in the southern portion of the property and returned anomalous values for Au, Ag, Cu, and Mo; and every sample showed elevated concentrations of gold-pathfinder element As, which is consistent with rock sampling data. Follow up work is warranted.

Table 11.4: Statistical analysis of 2019 Angus exploration program soil pathfinder elements (n=53).

Element	Ba (ppm)	Hg (ppm)	As (ppm)	Sb (ppm)	Bi (ppm)
Mean	77.77	0.085	13.80	0.315	0.20
Median	71.0	0.080	13.40	0.30	0.20
Mode	55.0	0.070	12.0	0.30	0.20
Max	186.0	0.140	27.80	0.60	0.40
Min	39.0	0.040	5.10	0.20	0.10

Table 11.5: Statistical analysis of 2019 Angus exploration program soil results (n=53).

Element	Au (ppm)	Ag (ppm)	Cu (ppm)	Mo (ppm)	Pb (ppm)	Zn (ppm)
Mean	0.028	0.258	95.036	0.958	9.25	79.8
Median	0.014	0.3	92.4	0.8	8.1	80.0
Mode	0.0053	0.3	126.2	0.6	6.7	80.0
Max	0.2452	0.5	184.9	3.3	24.5	139.0
Min	0.0018	0.05	18.4	0.4	4.7	29.0

## 12 Recommendations

During the 2019 exploration program on the Angus property the Longford crew was able to find historic workings, visible sulphide mineralization, and potentially new mineralized showings within the claim boundary. Rock samples ran up to 2,241.1 ppm copper and 27.1 ppm gold using ICP-ES/MS (AQ200) and (FA530-Au) assaying methods. Samples that returned elevated levels of gold within the anomalous range were also fire assayed (FA530-Au) for more accurate/reliable results.

A two-phase exploration program is recommended to further define zones of anomalous mineralization corresponding to the 2019 exploration program. A cost estimate is provided in Table 12.1. The exploration should consist of geological and structural mapping, prospecting, and soil sampling to test the highest-ranking target areas for further mineralization. Geophysics may also be implemented to further define zones of high priority after additional groundwork is undertaken. Once more defined areas of mineralization are established, diamond drilling should commence if warranted.

*Table 12.1: Proposed exploration budget.*

	Description	Estimated Cost (CAD)
<b>Phase 1</b>	<b>Geological and Structural Mapping, Prospecting, Soil Sampling</b>	
	3 weeks, 4-person crew (1 Project Manager, 2 Geologists, 1 helper)	\$100,000
	Interpretation of results-14 days	\$20,000
<b>Phase 2</b>	<b>Anomaly Follow Up (contingent on results from Phase 1)</b>	
	500 m of trenching	\$80,000
	1,500 m of diamond drilling to test geophysical, geochemical, and mapping targets	\$450,000
	<b>TOTAL</b>	<b>\$650,000</b>

The Phase 2 recommendations are conditional upon positive results of Phase 1 set forth above.

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- Holliday, J. R. and Cooke, D. R., (2007): Advances in Geological Models and Exploration Methods for Copper ± Gold Porphyry Deposits; in "Proceedings of Exploration 07: Fifth Decennial International Conference on Mineral Exploration" edited by B. Milkereit, 2007, p. 791–809.

Nixon, G.T., Kelman, M.C., Stevenson, D., Stokes, L.A., and Johnston, K.A., 2006, Preliminary Geology of the Nimpkish Map Area (NTS 092/L07), Northern Vancouver Island, British Columbia, British Columbia Geological Survey, Fieldwork 2005, Paper 2006-1

## APPENDIX A: Statement of Costs



**SEND TO:**

Kootenay Zinc Corp.  
400-837 West Hastings St  
Vancouver, BC  
Canada V6C 3N6  
604-8056467

Longford Exploration Services  
Suite 460 688 West Hastings Street  
Vancouver, BC  
Canada V6B 1P1  
778-809-7009

**3 Day Angus Exploration Program**

Personnel			Days	Rate	Line Total
Sept 27-29th, 2019	Project Manager - Rogers		3	\$ 800.00	\$ 2,400.00
Sept 27-29th, 2019	Senior Geologist		3	\$ 700.00	\$ 2,100.00
Sept 27-29th, 2019	Geologist		3	\$ 500.00	\$ 1,500.00
Sept 27-29th, 2019	Geologist		3	\$ 500.00	\$ 1,500.00
				<b>Cat. Total</b>	<b>\$ 7,500.00</b>
Food and Lodging			Units	Rate	Line Total
Sept 27-29th, 2019	Food and Groceries	per-diem rate per person	9	\$ 75.00	\$ 675.00
Sept 27-29th, 2019	Lodging	per-diem rate per person	9	\$ 150.00	\$ 1,350.00
				<b>Cat. Total</b>	<b>\$ 2,025.00</b>
Transportation			Units/Days	Unit Price	Line Total
Sept 27-29th, 2019	Truck	1 ton with safety and recovery gear	3	\$ 150.00	\$ 450.00
Sept 27-29th, 2019	Fuel	per km for truck	500	\$ 0.65	\$ 325.00
Sept 27-29th, 2019	BC Ferries		2	\$ 150.00	\$ 300.00
				<b>Cat. Total</b>	<b>\$ 1,075.00</b>
Equipment Rentals			Units	Unit Price	Line Total
Sept 27-29th, 2019	Electronics Kit	Radios, Sat phones, GPS, per man day	9	\$ 25.00	\$ 225.00
Sept 27-29th, 2019	Chain saw	Safety kit with chaps and helmet included.	3	\$ 25.00	\$ 75.00
Sept 27-29th, 2019	Mobile XRF		3	\$ 176.00	\$ 528.00
				<b>Cat. Total</b>	<b>\$ 828.00</b>
Consumable			Units	Unit Price	Line Total
Sept 27-29th, 2019	Field / Office Consumables	per field man day	9	\$ 30.00	\$ 270.00
				<b>Cat. Total</b>	<b>\$ 270.00</b>
Analytical			Units	Unit Price	Line Total
	Analysis - Rock	Bureau Veritas:PRP70-250, AQ200, FA530-Au overlimits	39	\$ 34.85	\$ 1,359.15
	Analysis - Soil	Bureau Veritas: SS80, AQ200	53	\$ 30.45	\$ 1,613.85
	Sample Shipping				\$ 200.00
				<b>Cat. Total</b>	<b>\$ 3,173.00</b>
Pre Field			Units	Unit Price	Line Total
Aug-Sept 2019	GIS maps, historical work processing, geo-referencing, proposal report		1	\$ 5,000.00	\$ 5,000.00
Aug-Sept 2019	Access negotiations, PID searches				
				<b>Cat. Total</b>	<b>\$ 5,000.00</b>
Post Field			Units	Unit Price	Line Total
Oct-Nov, 2019	Assessment report and work filing	GIS and summary report	1	\$ 5,000.00	\$ 5,000.00
				<b>Cat. Total</b>	<b>\$ 5,000.00</b>
Estimated Sub Total					\$ 24,871.00
Management 15%					\$ 3,730.65
Subtotal					\$ 28,601.65
GST 5%					\$ 1,430.08
<b>Total</b>					<b>\$ 30,031.73</b>

## APPENDIX B: 2019 Rock Sample Descriptions

Sample ID	Easting	Northing	Elevation	Type	Description
3293501	425795	5414534	538	Outcrop Rock Grab	Siliceous light green grey argillite with chaotic quartz veins and disseminated sulphides throughout. 1-3% pyrite/pyrrhotite.
3293502	424958	5415659	400	Outcrop Rock Grab	Dark to light white/black coarse-grained diabase to gabbro with 1-3cm quartz carbonate veins throughout. 1-3% chalcopyrite, 5% pyrite. Very gossanous and heavily oxidized.
3293503	424961	5415658	400	Outcrop Rock Grab	Dark to light white/black coarse-grained diabase to gabbro with 1-3cm quartz carbonate veins with minor potassic alteration throughout. 1-3% chalcopyrite, 5% pyrite.
3293504	424959	5415658	399	Outcrop Rock Grab	Dark to light white/black coarse-grained diabase to gabbro with 3cm quartz carbonate veins with epidote alteration in the vein salvages. 1-3% chalcopyrite, 5% pyrite.
3293505	424912	5415724	399	Outcrop Rock Grab	Dark grey to black very coarse grained to mega crystalline gabbro with thin ~1mm chaotic stringers of sulphides with pyrite, pyrrhotite and chalcopyrite ~1-3% sulphides.
3293506	424902	5415725	398	Outcrop Rock Grab	Dark grey to black coarse-grained gabbro with 3cm quartz carbonate vein with weathered oxidized sulphides and open boxworks.
3293507	424957	5415657	395	Float Rock Grab	Contact between dark grey to black coarse-grained gabbro and Buttle lake hornfels and silicified light green grey argillite with disseminated sulphides throughout (~10%).
3293508	423637	5415931	507	Outcrop Rock Grab	Buttle lake hornfels and silicified light green grey argillite with 1-3% pyrite and pyrrhotite
3293509	422977	5416727	429	Outcrop Rock Grab	Medium grained black/white fresh granodiorite. 1% pyrrhotite.
3293510	422977	5416730	429	Outcrop Rock Grab	~1m fine grained dark grey silicified dyke in the medium grained black/white fresh granodiorite outcrop. Dyke contains 2cm quartz vein with 1-2% chalcopyrite, 3-5% pyrite with medium oxidation throughout.
3293511	422980	5416722	429	Outcrop Rock Grab	~1m fine grained dark grey silicified dyke in the medium grained black/white fresh granodiorite outcrop. Dyke contains 2cm quartz vein with 1-2% chalcopyrite, 3-5% pyrite with medium oxidation throughout.

Sample ID	Easting	Northing	Elevation	Type	Description
3293512	422982	5416734	434	Outcrop Rock Grab	Fine grained dark grey silicified dyke that is highly weathered and oxidized. 3-5% chalcopyrite, 7-10% pyrite and gossanous weathered sulphides.
3293513	422982	5416730	434	Outcrop Rock Grab	Fine grained dark grey silicified dyke that is highly weathered and oxidized. 3-5% chalcopyrite, 7-10% pyrite and gossanous weathered sulphides.
3293514	422979	5416735	436	Outcrop Rock Grab	Fine grained dark grey silicified dyke that is highly weathered and oxidized with highly disseminated sulphides throughout ~10%. Potentially highly altered and metamorphosed Buttle lake formation.
3293515	422074	5417557	496	Outcrop Rock Grab	Silicified light grey chert with sulphides disseminated throughout (mostly pyrite ~5% and trace chalcopyrite)
3293516	422072	5417559	496	Outcrop Rock Grab	Silicified light grey chert with sulphides disseminated throughout (mostly pyrite ~5% and trace chalcopyrite)
3293517	422069	5417560		Outcrop Rock Grab	Oxidized massive quartz vein with gossanous weathered sulphides
3293518	422080	5417553	495	Outcrop Rock Grab	Silicified light grey chert with sulphides disseminated throughout (mostly pyrite ~5% and trace chalcopyrite)
3293519	422084	5417554	496	Outcrop Rock Grab	Silicified light grey chert with sulphides disseminated throughout (mostly pyrite ~5% and trace chalcopyrite)
3293520	422085	5417548	494	Outcrop Rock Grab	Silicified light grey chert with sulphides disseminated throughout (mostly pyrite ~5% and trace chalcopyrite)
3293521	425591	5413855		Outcrop Rock Grab	Silicified Buttle Lake Formation Argillite with 7% sulphides mostly pyrite.
3293523	422091	5417551	493	Outcrop Rock Grab	1mm to 1cm silicified chert breccia with chaotic pyrite veinlets (5-10% sulphides with trace chalcopyrite).
3293524	422287	5417404	479	Outcrop Rock Grab	1mm to 1cm silicified chert with chaotic pyrite veinlets (10% sulphides with trace chalcopyrite).
3293525	422344	5417368	475	Outcrop Rock Grab	Dark black medium grained diorite with disseminated pyrite and trace chalcopyrite.
3293526	422447	5417306	463	Outcrop Rock Grab	Silicified light grey chert with sulphides disseminated throughout (mostly pyrite ~5% and trace chalcopyrite)
3293527	422773	5416993	470	Outcrop Rock Grab	Silver/white fine-grained gouge with pyrite/arsenopyrite in siliciclastic host.

Sample ID	Easting	Northing	Elevation	Type	Description
3293528	422786	5416986	464	Outcrop Rock Grab	Highly oxidized gossanous siliceous fault material in a fine grained dark grey diorite.
3293529	422780	5416985	464	Outcrop Rock Grab	Highly oxidized gossanous siliceous fault material in a fine grained dark grey diorite with massive pyrite and chalcopyrite (~10%) found on the edge of a 2m shear zone with a trend of 310 degrees.
3293851	422920	5416613	479	Outcrop Rock Grab	Silicified volcanic with disseminated py and po and concentrated within qtz carb veinlets
3293852	424695	5415788	431	Outcrop Rock Grab	High grade massive sulphides within dark-medium gray fine-grained silicified argillite with quartz - carbonate stringers
3293853	424697	5415789	431	Outcrop Rock Grab	Unoxidized host rock (unaltered) of Buttle Lake sediments
3293854	424693	5415788	430	Outcrop Rock Grab	Py within qtz carb stringers of Buttle Lake host rock
3293855	424700	5415786	431	Outcrop Rock Grab	Silicified Buttle Lake unit with veinlets
3293856	424701	5415785	430	Outcrop Rock Grab	2% Py disseminated within gossan contact
3293857	424700	5415785	430	Outcrop Rock Grab	5% Py hosted within miniscule stringers
3293858	424701	5415785	429	Outcrop Rock Grab	90% Py from 5 cm thick massive sulphide vein
3293859	424703	5415784	427	Outcrop Rock Grab	Heavily mineralised, semi-massive with 50% Py
3293860	424708	5415780	427	Outcrop Rock Grab	Fine grained matrix with disseminated py within qtz carb. Highly siliceous.
3293523	422091	5417551	493	Outcrop Rock Grab	1mm to 1cm silicified chert breccia with chaotic pyrite veinlets (5-10% sulphides with trace chalcopyrite).

## APPENDIX C: 2019 Soil Sample Descriptions

Sample ID	Easting	Northing	Elevation	Colour	Horizon	Grain Size	Depth (cm)	Comments
3293651	425159.958	5413806.497	552	beige	a/b	fg	40	Cut block
3293652	425156.132	5413848.904	537	beige	b	cg	40	
3293653	425153.028	5413902.092	541	beige	b	mg	70	
3293654	425151.551	5413950.478	573	orange	b	cg	20	Cut block
3293655	425152.115	5413998.053	583	orange/brown	b	cg	35	pebbly; cut block
3293656	425150.447	5414048.221	593	orange/brown	b/c	cg	50	pebbly; cut block
3293657	425149.741	5414099.597	608	orange/brown	b	cg	30	pebbly; cut block
3293658	425152.384	5414149.037	622	orange/brown	b	cg	60	pebbly
3293659	425150.667	5414196.083	637	orange/brown	b	cg	50	pebbly
3293660	425252.404	5414000.715	597	beige	b	mg	60	good
3293661	425301.606	5413999.832	602	orange/brown	b	mg	60	good
3293662	425345.843	5414000.908	612	orange/brown	a/b	cg	30	poor; adjacent road
3293663	425402.735	5413999.588	618	beige/grey	b/c	mg	60	good
3293664	425452.742	5413999.142	626	orange/brown	b	mg	30	good
3293665	425504.833	5414000.562	632	orange	b	mg	50	good
3293666	425551.959	5413998.479	635	orange	b	cg	50	good
3293667	425603.381	5413999.461	634	orange	b/c	mg	55	good
3293668	425252.765	5413951.012	580	orange	b	cg	35	average sample. Pebbly
3293669	425302.300	5413947.897	586	orange/brown	b/c	mg	60	
3293670	425306.123	5413953.848	586	orange/brown	b/c	mg	60	duplicate of #669
3293671	425353.177	5413946.331	592	orange	c	mg	90	good
3293672	425403.643	5413947.100	598	brown	b/c	mg	45	good
3293673	425398.941	5413897.017	584	brown	b/c	mg	50	
3293674	425350.051	5413899.228	580	orange/brown	b	cg	40	
3293675	425302.833	5413900.083	572	orange/brown	b	mg	40	
3293676	425251.447	5413901.769	565	orange/brown	b/c	cg	60	last sample PL
3293751	425198.383	5413800.418	545	light brown	b/c	mg	70	pebbly; top of steep slope
3293752	425201.045	5413856.754	548		a/b/c	mg	80	poor; pebbly; steep slope
3293753	425204.211	5413901.293	565	light brown	b/c	cg	55	steep slope; very dry
3293754	425199.695	5413952.721	573	light brown	b	mg	50	
3293755	425201.618	5413998.060	583	orange/brown	b/c	cg	45	

Sample ID	Easting	Northing	Elevation	Colour	Horizon	Grain Size	Depth (cm)	Comments
3293756	425205.695	5414050.369	603	brown	a/b/c	cg	40	pebbly
3293757	425203.997	5414098.869	617	orange/brown	b/c	mg	45	
3293758	425203.899	5414146.118	631	greenish	b	mg	50	deep in trough
3293759	425203.271	5414197.829	646	brown	b	mg		
3293760	425249.232	5414097.927	625	orange/brown	b/c	mg	40	trough
3293761	425248.841	5414052.232	614	orange/brown	b/c	mg	45	in hollow
3293762	425300.621	5414046.981	617	orange/brown	b/c	cg	70	
3293763	425344.632	5414058.292	629	light brown	b	cg		taken from road cut
3293764	425404.054	5414049.045	637	orange/brown	b	mg	65	road cut; top of slope
3293765	425442.376	5414051.868	645	orange/brown	b	mg	60	roadside at cut bank, top
3293766	425497.188	5414059.588	656	greenish/orange	b	mg	45	
3293767	425545.608	5414066.499	658	orange/brown	b	mg	55	roadside cut profile
3293768	425601.103	5414048.528			b		65	side of path profile
3293769	425592.106	5413951.031	615	orange/brown	b/c	mg	55	pebbly
3293770	425555.592	5413946.402	612	brown	b/c	mg	45	
3293771	425504.320	5413951.094	613	light brown	b/c	mg	60	
3293772	425504.320	5413951.094	613	light brown	b/c	mg	60	Duplicate of #771
3293773	425450.375	5413942.580	608	brown	b/c	mg	65	pebbly
3293774	425451.822	5413897.205	587	dark brown	a/b	mg	75	poor location
3293775	425496.566	5413903.055	595	light brown	b/c	mg	35	in deep trough
3293776	425553.769	5413897.837	594	light brown	b/c	mg	50	
3293777	425599.363	5413896.008	593	brown	b	mg	45	thick bush

## APPENDIX D: Statement of Qualifications

I, Sarah Ryan, of office 460-688 Hastings St., Vancouver, British Columbia, Canada do hereby certify the following:

- I graduated from Memorial University with a degree in Earth Sciences in May 2018, and I have practiced my profession continuously since 2018.
- From 2018 to present I have been working in Canada as a mineral exploration geologist and have been actively involved in projects in BC, YK, ON, and QC.
- I am Geologist in Training member of PEGNL in good standing.
- I am a Consulting Geologist and have been so since September 2018.

Oct 28, 2019

Sarah Ryan

Date

## APPENDIX E: Statement of Qualifications

I, Mateusz Krukowski, of office 460-688 Hastings St., Vancouver, British Columbia, Canada do hereby certify the following:

- I graduated from Simon Frazer University with a degree in Earth Science majoring in Geology in 2012, and I have practiced my profession continuously since 2012.
- From 2012 to present I have been working in Canada as a mineral exploration manager and have been actively involved in projects in BC, YK, ON, and QC.

Oct 28, 2019

Mateusz Krukowski

\_\_\_\_\_  
Date

# APPENDIX F: 2019 Rock Sample Analytical Certificates



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Bureau Veritas Commodities Canada Ltd.  
9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada  
PHONE (604) 253-3158

Client: **Longford Exploration Services Ltd.**  
460-688 West Hastings St.  
Vancouver British Columbia V6B 1P1 Canada

Submitted By: James Rogers  
Receiving Lab: Canada-Vancouver  
Received: September 30, 2019  
Report Date: October 11, 2019  
Page: 1 of 3

## CERTIFICATE OF ANALYSIS

VAN19002847.1

### CLIENT JOB INFORMATION

Project: Angus  
Shipment ID:  
P.O. Number  
Number of Samples: 39

### SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	39	Crush, split and pulverize 250 g rock to 200 mesh			VAN
AQ200	39	1:1:1 Aqua Regia digestion ICP-MS analysis	0.5	Completed	VAN

### SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps  
PICKUP-RJT Client to Pickup Rejects

### ADDITIONAL COMMENTS

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Longford Exploration Services Ltd.  
460-688 West Hastings St.  
Vancouver British Columbia V6B 1P1  
Canada

CC: Vedran Pobric  
Matt Krukowski

*Jeffrey Cannon*  
JEFFREY CANNON  
Geochemistry Department Supervisor

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.  
All results are considered the confidential property of the client. Bureau Veritas assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted.  
\*\*\* asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.



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Bureau Veritas Commodities Canada Ltd.  
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PHONE (604) 253-3158

**Client:** Longford Exploration Services Ltd.  
460-688 West Hastings St.  
Vancouver British Columbia V6B 1P1 Canada

**Project:** Angus  
**Report Date:** October 11, 2019

**Page:** 2 of 3 **Part:** 1 of 2

**CERTIFICATE OF ANALYSIS** **VAN19002847.1**

Method	Analyte	WGHT	AQ200		AQ200		AQ200		AQ200		AQ200		AQ200		AQ200		AQ200		AQ200		AQ200	
			Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
Unit		kg	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	
MDL		0.01	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	1	0.01	0.001	
3293501	Rock	1.98	0.7	76.6	2.8	84	<0.1	12.6	16.1	942	4.79	3.7	<0.5	1.1	119	0.2	<0.1	<0.1	137	2.31	0.108	
3293502	Rock	0.73	0.7	252.5	1.7	155	0.5	99.3	148.5	928	14.26	4.0	5.3	0.4	8	0.1	0.1	<0.1	494	0.26	0.075	
3293503	Rock	4.32	0.4	272.9	0.9	70	0.2	18.5	26.7	454	5.03	0.8	9.6	0.4	33	0.2	<0.1	<0.1	309	1.83	0.076	
3293504	Rock	2.64	0.5	214.2	0.9	68	0.1	16.7	24.6	490	4.73	0.5	20.4	0.4	35	0.1	<0.1	<0.1	236	2.45	0.064	
3293505	Rock	2.73	0.5	325.8	1.4	50	0.2	12.2	17.5	335	4.39	<0.5	23.8	0.6	23	<0.1	<0.1	<0.1	366	1.50	0.096	
3293506	Rock	1.28	0.1	73.9	25.7	45	<0.1	7.6	9.7	293	2.61	1.4	62.0	0.3	14	0.1	0.1	<0.1	132	2.06	0.032	
3293507	Rock	2.31	0.4	117.5	1.7	47	<0.1	5.9	12.7	310	4.59	0.6	2.3	0.7	70	<0.1	0.2	<0.1	151	1.58	0.101	
3293508	Rock	3.10	0.4	109.7	2.1	66	<0.1	15.3	14.3	809	4.51	1.3	3.0	2.0	30	0.1	<0.1	<0.1	138	1.65	0.160	
3293509	Rock	1.65	0.4	5.6	2.6	26	<0.1	1.6	5.5	480	2.02	<0.5	1.1	11.1	23	<0.1	<0.1	<0.1	37	1.27	0.038	
3293510	Rock	2.48	0.2	135.0	2.0	45	<0.1	19.6	19.7	831	3.81	2.4	3.1	0.8	64	<0.1	0.1	<0.1	147	3.74	0.172	
3293511	Rock	2.36	0.2	80.6	1.7	35	<0.1	19.2	16.2	483	2.36	0.8	1.4	1.0	288	<0.1	<0.1	<0.1	90	4.31	0.150	
3293512	Rock	1.76	0.6	142.2	4.3	31	0.2	17.5	17.5	240	3.36	2.9	3.4	1.1	42	0.2	0.3	<0.1	52	2.64	0.077	
3293513	Rock	1.67	1.2	757.8	1.9	61	0.7	68.8	46.4	236	4.94	15.3	9.4	0.7	61	0.2	1.6	<0.1	127	1.39	0.081	
3293514	Rock	1.92	0.5	396.6	1.4	37	0.3	42.1	46.8	316	4.51	1.6	20.5	1.4	221	<0.1	<0.1	<0.1	92	2.81	0.158	
3293515	Rock	1.27	0.7	93.9	2.2	34	0.1	12.0	17.1	423	4.24	7.0	2.7	1.0	16	<0.1	<0.1	<0.1	102	4.52	0.078	
3293516	Rock	0.86	0.7	82.1	1.3	25	0.1	14.2	16.4	423	3.22	1.2	1.9	1.0	104	<0.1	<0.1	0.1	71	2.40	0.101	
3293517	Rock	1.76	0.9	84.1	2.0	43	0.1	10.7	15.0	653	4.31	8.3	1.8	1.0	18	<0.1	<0.1	0.1	126	6.06	0.068	
3293518	Rock	2.26	0.9	229.6	2.1	17	0.5	11.2	29.9	305	5.62	9.9	19.9	1.0	85	<0.1	2.4	0.3	44	2.62	0.078	
3293519	Rock	2.47	0.4	142.6	1.6	31	0.2	9.0	19.0	334	4.31	2.7	2.4	1.4	75	<0.1	0.7	0.2	82	1.72	0.051	
3293520	Rock	2.22	0.8	222.0	2.3	20	0.4	8.8	29.5	300	4.96	4.4	8.4	1.3	42	<0.1	<0.1	0.3	50	1.32	0.052	
3293521	Rock	4.08	3.3	86.9	2.8	28	0.1	14.3	14.1	222	4.22	<0.5	2.3	1.6	50	<0.1	<0.1	0.2	66	1.37	0.075	
3293522	Rock	1.58	0.5	42.6	4.5	48	<0.1	7.4	13.8	383	3.30	0.8	2.1	1.1	396	<0.1	<0.1	<0.1	71	3.01	0.115	
3293523	Rock	1.95	0.7	192.0	3.0	41	0.2	17.7	33.0	427	5.16	14.5	5.2	1.2	230	<0.1	0.3	0.2	122	2.67	0.120	
3293524	Rock	1.27	0.9	283.8	2.1	29	0.4	15.1	37.0	424	7.06	7.8	11.5	0.7	35	<0.1	1.5	0.3	118	1.14	0.064	
3293525	Rock	1.10	0.5	203.4	1.6	23	0.2	13.9	18.2	249	3.10	0.9	5.0	2.7	53	<0.1	<0.1	<0.1	63	1.44	0.057	
3293526	Rock	1.32	2.4	114.6	1.7	42	0.2	19.3	19.7	394	5.33	3.8	5.7	0.9	36	<0.1	<0.1	<0.1	142	1.81	0.064	
3293527	Rock	1.08	0.9	486.4	1.9	30	1.5	9.9	34.8	250	3.34	4.5	16.3	0.6	35	0.1	0.6	<0.1	39	2.89	0.078	
3293528	Rock	2.18	19.8	2241.1	9.3	144	1.5	25.7	121.2	1219	18.94	90.0	35.5	0.6	26	0.5	3.7	0.8	333	0.62	0.069	
3293529	Rock	1.02	1.8	1653.3	4.8	85	2.7	53.4	72.0	258	11.20	2.7	38.9	0.4	38	1.3	2.5	0.1	85	1.56	0.059	
3293851	Rock	1.99	0.7	85.3	2.2	37	0.2	18.0	19.1	517	2.16	15.1	15.5	1.3	64	<0.1	<0.1	<0.1	88	5.39	0.163	

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**Client:** Longford Exploration Services Ltd.  
460-688 West Hastings St.  
Vancouver British Columbia V6B 1P1 Canada

**Project:** Angus  
**Report Date:** October 11, 2019

**Page:** 2 of 3

**Part:** 2 of 2

# CERTIFICATE OF ANALYSIS

**VAN19002847.1**

Method	Analyte	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200
		La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te
Unit		ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
MDL		1	1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.05	1	0.5	0.2	
3293501	Rock	6	22	1.44	278	0.358	30	3.81	0.256	0.80	0.2	0.02	8.8	<0.1	0.09	10	<0.5	<0.2
3293502	Rock	3	10	2.77	4	0.213	30	4.63	0.007	<0.01	0.3	0.11	30.3	<0.1	1.14	24	2.9	<0.2
3293503	Rock	4	4	0.90	14	0.269	25	2.03	0.121	0.06	<0.1	0.02	7.6	<0.1	0.18	10	<0.5	<0.2
3293504	Rock	3	4	0.94	10	0.228	27	2.00	0.078	0.05	0.1	0.02	9.2	<0.1	0.20	9	<0.5	<0.2
3293505	Rock	5	3	0.52	12	0.204	31	1.39	0.142	0.07	<0.1	0.02	5.1	<0.1	0.27	8	0.7	<0.2
3293506	Rock	2	4	0.47	6	0.153	37	1.97	0.017	0.01	0.1	0.04	5.2	<0.1	<0.05	11	<0.5	<0.2
3293507	Rock	5	2	0.59	28	0.229	29	2.34	0.212	0.08	<0.1	0.07	7.8	<0.1	0.21	9	1.2	<0.2
3293508	Rock	10	29	1.44	21	0.273	35	2.83	0.081	0.11	0.3	0.04	13.5	<0.1	0.41	11	<0.5	<0.2
3293509	Rock	29	4	0.55	50	0.117	<20	1.57	0.060	0.17	0.1	<0.01	2.5	<0.1	<0.05	6	<0.5	<0.2
3293510	Rock	7	19	1.06	24	0.178	<20	3.74	0.128	0.11	0.2	<0.01	12.3	<0.1	0.37	10	<0.5	<0.2
3293511	Rock	7	16	0.57	55	0.148	<20	4.99	0.639	0.13	0.1	<0.01	7.5	<0.1	0.14	9	<0.5	<0.2
3293512	Rock	6	16	0.23	9	0.173	<20	2.21	<0.001	<0.01	0.1	0.08	5.4	<0.1	1.47	8	1.0	<0.2
3293513	Rock	8	47	0.72	35	0.319	<20	2.13	0.179	0.09	0.5	0.25	5.5	0.2	1.95	9	1.6	0.3
3293514	Rock	8	12	0.81	33	0.176	<20	4.17	0.523	0.09	0.1	0.01	3.6	<0.1	1.93	10	1.3	0.2
3293515	Rock	6	19	0.66	3	0.228	<20	3.84	0.026	0.03	0.3	0.13	4.7	0.1	2.49	13	0.5	<0.2
3293516	Rock	8	16	0.54	28	0.237	<20	2.31	0.191	0.12	0.2	0.03	3.7	<0.1	1.22	7	<0.5	<0.2
3293517	Rock	6	21	0.88	2	0.232	<20	5.12	0.005	0.02	0.3	0.08	6.7	<0.1	1.07	17	<0.5	<0.2
3293518	Rock	6	10	0.27	15	0.191	<20	2.92	0.226	0.06	0.3	0.92	4.8	0.9	3.61	10	1.0	0.4
3293519	Rock	6	17	1.06	24	0.223	<20	3.72	0.391	0.17	0.2	0.13	6.7	0.2	1.60	11	<0.5	<0.2
3293520	Rock	6	11	0.78	14	0.184	<20	2.15	0.136	0.11	0.2	0.45	3.7	0.5	3.00	8	0.9	0.3
3293521	Rock	7	21	0.72	16	0.222	<20	1.90	0.213	0.12	0.3	0.02	3.6	<0.1	1.85	6	<0.5	0.6
3293522	Rock	7	13	1.13	102	0.145	<20	5.39	0.351	0.17	0.1	0.01	6.5	<0.1	0.58	12	<0.5	<0.2
3293523	Rock	10	29	0.91	103	0.276	<20	5.40	0.704	0.38	0.2	0.07	4.8	0.1	1.96	13	0.6	0.3
3293524	Rock	5	23	1.08	27	0.262	<20	2.99	0.168	0.15	0.3	0.17	9.2	0.1	3.18	10	1.3	0.5
3293525	Rock	5	10	0.73	18	0.130	<20	2.19	0.188	0.10	0.1	<0.01	3.5	<0.1	0.96	6	<0.5	<0.2
3293526	Rock	5	45	1.08	16	0.210	<20	2.98	0.118	0.09	0.2	0.12	9.2	<0.1	1.55	9	<0.5	<0.2
3293527	Rock	5	20	0.49	24	0.144	<20	2.92	0.034	0.04	0.2	0.67	3.5	0.5	2.27	7	3.1	<0.2
3293528	Rock	6	55	1.70	32	0.144	<20	3.84	0.013	0.07	0.3	0.23	13.2	0.1	<0.05	17	1.8	1.8
3293529	Rock	5	36	0.56	17	0.152	<20	2.17	0.068	0.04	0.4	0.96	7.8	0.5	7.99	7	4.8	0.9
3293851	Rock	10	29	0.42	11	0.165	<20	4.29	0.097	0.06	0.2	0.02	4.8	<0.1	0.28	12	<0.5	<0.2

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**Project:** Angus  
**Report Date:** October 11, 2019

**Page:** 3 of 3

**Part:** 1 of 2

**CERTIFICATE OF ANALYSIS** **VAN19002847.1**

Method	Analyte	WGHT	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200
		Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
	Unit	kg	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	
	MDL	0.01	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	1	0.01	0.001
3293852	Rock	1.09	20.1	757.3	16.7	51	1.8	16.9	38.1	603	10.87	12.8	43.4	1.1	46	<0.1	1.6	1.2	119	0.91	0.078
3293853	Rock	1.60	11.2	139.5	3.6	90	0.2	14.3	18.6	903	5.27	3.4	10.4	1.5	51	<0.1	<0.1	0.1	198	2.21	0.159
3293854	Rock	2.39	2.1	299.8	14.9	114	2.2	12.8	19.3	565	9.03	38.1	75.7	1.1	43	0.7	0.6	0.9	127	1.36	0.068
3293855	Rock	1.41	3.7	542.7	4.5	75	1.6	9.3	15.4	638	6.90	6.7	4479.7	1.5	44	0.2	0.6	2.9	130	1.00	0.097
3293856	Rock	1.89	2.4	122.2	6.3	103	0.4	10.3	17.0	975	5.58	5.3	8.3	1.9	127	0.2	<0.1	<0.1	170	2.16	0.166
3293857	Rock	1.23	8.3	1289.3	17.0	53	10.4	11.8	53.6	428	14.74	26.4	29040.4	1.0	12	0.2	4.8	9.8	68	0.51	0.066
3293858	Rock	0.96	9.0	894.4	14.7	76	6.4	11.5	41.8	551	10.57	43.4	11802.3	1.6	9	0.2	0.8	4.3	63	0.63	0.073
3293859	Rock	1.76	4.5	1139.8	111.9	99	35.7	11.8	29.9	717	12.16	271.4	27622.4	1.6	33	0.8	1.2	8.2	95	1.39	0.115
3293860	Rock	2.65	1.3	68.8	4.2	83	0.1	11.3	13.5	803	5.17	1.8	18.0	2.1	143	<0.1	<0.1	<0.1	166	2.76	0.107

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**Client:** Longford Exploration Services Ltd.  
460-688 West Hastings St.  
Vancouver British Columbia V6B 1P1 Canada

**Project:** Angus  
**Report Date:** October 11, 2019

**Page:** 3 of 3

**Part:** 2 of 2

# CERTIFICATE OF ANALYSIS

**VAN19002847.1**

Method	Analyte	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	
		La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te
Unit		ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
MDL		1	1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.05	1	0.5	0.2	
3293852	Rock	5	14	0.95	56	0.191	<20	2.55	0.107	0.17	0.4	0.10	10.4	0.2	6.55	10	20.5	1.2
3293853	Rock	8	20	1.51	202	0.302	<20	2.96	0.095	0.51	0.3	0.02	20.1	<0.1	0.09	11	0.6	<0.2
3293854	Rock	4	18	0.90	26	0.234	<20	3.06	0.036	0.14	0.4	0.20	12.9	<0.1	4.05	11	13.4	0.9
3293855	Rock	7	16	1.51	146	0.276	<20	3.46	0.130	0.38	0.4	0.39	12.7	0.1	1.11	12	0.9	3.0
3293856	Rock	10	13	1.80	327	0.382	<20	4.94	0.349	0.85	0.3	0.05	16.6	0.1	0.12	14	<0.5	<0.2
3293857	Rock	3	10	1.09	34	0.124	<20	2.35	0.025	0.20	0.6	3.18	5.2	0.5	>10	10	6.8	14.5
3293858	Rock	3	10	1.22	78	0.128	<20	2.62	0.023	0.24	0.5	1.77	5.5	0.4	5.41	9	3.6	5.8
3293859	Rock	7	10	1.44	59	0.240	<20	3.44	0.030	0.23	1.1	1.94	8.7	0.3	6.30	14	3.1	13.7
3293860	Rock	11	20	1.57	193	0.318	<20	5.57	0.480	0.38	0.2	0.04	15.1	<0.1	0.07	14	<0.5	<0.2

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**Client: Longford Exploration Services Ltd.**  
460-688 West Hastings St.  
Vancouver British Columbia V6B 1P1 Canada

Project: Angus  
Report Date: October 11, 2019

Page: 1 of 1 Part: 1 of 2

**QUALITY CONTROL REPORT** **VAN19002847.1**

Method	Analyte	WGHT	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200
		Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	
	Unit	kg	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%		
	MDL	0.01	0.1	0.1	0.1	1	0.1	0.1	0.1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	1	0.01	0.001		
Pulp Duplicates																						
3293506	Rock	1.28	0.1	73.9	25.7	45	<0.1	7.6	9.7	293	2.61	1.4	62.0	0.3	14	0.1	<0.1	132	2.06	0.032		
REP 3293506	QC	0.1	73.6	23.8	41	<0.1	7.9	9.4	281	2.61	1.0	58.0	0.2	13	<0.1	0.1	<0.1	133	2.05	0.028		
3293852	Rock	1.09	20.1	757.3	16.7	51	1.8	16.9	38.1	603	10.87	12.8	43.4	1.1	46	<0.1	1.6	1.2	119	0.91	0.078	
REP 3293852	QC	20.5	766.2	16.6	51	1.9	17.1	38.0	612	11.02	12.8	44.6	1.1	47	<0.1	1.7	1.2	118	0.92	0.079		
Core Reject Duplicates																						
3293514	Rock	1.92	0.5	396.6	1.4	37	0.3	42.1	46.8	316	4.51	1.6	20.5	1.4	221	<0.1	<0.1	<0.1	92	2.81	0.158	
DUP 3293514	QC	0.4	370.9	1.5	39	0.3	40.3	47.8	287	4.58	0.9	17.8	1.5	215	<0.1	<0.1	<0.1	94	2.58	0.162		
Reference Materials																						
STD BVGEO01	Standard	10.8	4538.3	185.6	1745	2.6	163.8	25.6	745	3.92	110.8	192.5	14.1	57	6.1	2.2	23.7	75	1.35	0.072		
STD DS11	Standard	14.3	163.6	143.4	362	1.8	84.2	13.7	1023	3.16	45.3	246.3	8.5	75	2.6	7.8	12.8	50	1.08	0.067		
STD OREAS262	Standard	0.7	119.2	55.1	152	0.5	67.4	28.4	552	3.44	34.0	61.2	9.3	36	0.6	1.9	0.9	23	3.06	0.039		
STD OREAS262	Standard	0.7	116.1	62.9	164	0.5	68.7	25.7	564	3.50	37.4	56.8	10.5	39	0.7	2.8	1.2	23	3.05	0.041		
STD BVGEO01 Expected		10.8	4415	187	1741	2.53	163	25	733	3.7	121	219	14.4	55	6.5	2.2	25.6	73	1.3219	0.0727		
STD DS11 Expected		13.9	149	138	345	1.71	77.7	14.2	1055	3.1	42.8	79	7.65	67.3	2.37	7.2	12.2	50	1.063	0.0701		
STD OREAS262 Expected		0.68	118	56	154	0.45	62	26.9	530	3.284	35.8	65	9.33	36	0.61	3.39	1.03	22.5	2.98	0.04		
BLK	Blank	<0.1	0.3	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.001		
BLK	Blank	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.001		
Prep Wash																						
ROCK-VAN	Prep Blank	1.0	3.0	1.2	33	<0.1	0.8	3.1	465	1.76	1.1	<0.5	2.2	20	<0.1	<0.1	<0.1	22	0.56	0.035		
ROCK-VAN	Prep Blank	1.3	2.4	1.3	27	<0.1	0.5	3.2	421	1.77	1.3	<0.5	2.4	21	<0.1	<0.1	<0.1	24	0.57	0.039		

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Vancouver British Columbia V6B 1P1 Canada

Project: Angus  
Report Date: October 11, 2019

Page: 1 of 1

Part: 2 of 2

## QUALITY CONTROL REPORT

VAN19002847.1

Method	Analyte	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200
		La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te
Unit		ppm	ppm	%	ppm	%	ppm	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
MDL		1	1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.05	1	0.5	0.2	
Pulp Duplicates																		
3293506	Rock	2	4	0.47	6	0.153	37	1.97	0.017	0.01	0.1	0.04	5.2	<0.1	<0.05	11	<0.5	<0.2
REP 3293506	QC	2	4	0.47	5	0.151	33	1.99	0.017	0.01	0.1	0.03	5.1	<0.1	<0.05	10	<0.5	<0.2
3293852	Rock	5	14	0.95	56	0.191	<20	2.55	0.107	0.17	0.4	0.10	10.4	0.2	6.55	10	20.5	1.2
REP 3293852	QC	5	14	0.97	58	0.198	<20	2.60	0.107	0.17	0.4	0.10	10.6	0.2	6.76	10	20.6	1.2
Core Reject Duplicates																		
3293514	Rock	8	12	0.81	33	0.176	<20	4.17	0.523	0.09	0.1	0.01	3.6	<0.1	1.93	10	1.3	0.2
DUP 3293514	QC	7	11	0.81	32	0.175	<20	4.23	0.514	0.09	0.1	<0.01	4.0	<0.1	1.77	9	0.7	0.3
Reference Materials																		
STD BVGEO01	Standard	26	189	1.35	339	0.243	<20	2.44	0.202	0.92	3.2	0.09	5.8	0.6	0.70	8	4.9	1.0
STD DS11	Standard	20	64	0.87	442	0.104	<20	1.18	0.073	0.41	2.8	0.25	3.3	5.7	0.29	5	2.2	4.6
STD OREAS262	Standard	17	45	1.21	255	0.003	<20	1.41	0.073	0.34	<0.1	0.17	3.2	0.5	0.25	4	0.5	0.2
STD OREAS262	Standard	18	43	1.21	265	0.003	29	1.29	0.072	0.33	0.1	0.16	3.3	0.5	0.26	4	<0.5	0.2
STD BVGEO01 Expected		25.9	171	1.2963	340	0.233		2.347	0.1924	0.89	3.5	0.1	5.97	0.62	0.6655	7.37	4.84	1.02
STD DS11 Expected		18.6	61.5	0.85	417	0.0976		1.129	0.0694	0.4	2.9	0.26	3.1	4.9	0.2835	4.7	2.2	4.56
STD OREAS262 Expected		15.9	41.7	1.17	248	0.003		1.204	0.071	0.312	0.13	0.17	3.24	0.47	0.253	3.73	0.4	0.23
BLK	Blank	<1	<1	<0.01	<1	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2
BLK	Blank	<1	<1	<0.01	<1	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2
Prep Wash																		
ROCK-VAN	Prep Blank	6	3	0.46	45	0.075	24	0.86	0.081	0.08	<0.1	<0.01	2.2	<0.1	<0.05	3	<0.5	<0.2
ROCK-VAN	Prep Blank	7	3	0.41	72	0.082	27	0.76	0.077	0.08	<0.1	<0.01	2.4	<0.1	<0.05	3	<0.5	<0.2

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**Client:** Longford Exploration Services Ltd.  
460-688 West Hastings St.  
Vancouver British Columbia V6B 1P1 Canada

Submitted By: James Rogers  
Receiving Lab: Canada-Vancouver  
Received: September 30, 2019  
Report Date: October 29, 2019  
Page: 1 of 3

## CERTIFICATE OF ANALYSIS

**VAN19002847.2**

### CLIENT JOB INFORMATION

Project: Angus  
Shipment ID:  
P.O. Number  
Number of Samples: 39

### SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps  
PICKUP-RJT Client to Pickup Rejects

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Longford Exploration Services Ltd.  
460-688 West Hastings St.  
Vancouver British Columbia V6B 1P1  
Canada

CC: Vedran Pobric  
Matt Krukowski

### SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	39	Crush, split and pulverize 250 g rock to 200 mesh			VAN
AQ200	39	1:1:1 Aqua Regia digestion ICP-MS analysis	0.5	Completed	VAN
FA530-Au	4	Lead collection fire assay fusion - Grav finish	30	Completed	VAN
EN002	4	Environmental disposal charge-Fire assay lead waste			VAN

### ADDITIONAL COMMENTS

Version 2 : FA530-Au included.



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\*\*\* asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.





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**Project:** Angus  
**Report Date:** October 29, 2019

**Page:** 2 of 3

**Part:** 2 of 2

# CERTIFICATE OF ANALYSIS

VAN19002847.2

Method	Analyte	Unit	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	FA530
			La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te
		MDL	ppm	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	gm/t	
3293501	Rock		6	22	1.44	278	0.358	30	3.81	0.256	0.80	0.2	0.02	8.8	<0.1	0.09	10	<0.5	<0.2
3293502	Rock		3	10	2.77	4	0.213	30	4.63	0.007	<0.01	0.3	0.11	30.3	<0.1	1.14	24	2.9	<0.2
3293503	Rock		4	4	0.90	14	0.269	25	2.03	0.121	0.06	<0.1	0.02	7.6	<0.1	0.18	10	<0.5	<0.2
3293504	Rock		3	4	0.94	10	0.228	27	2.00	0.078	0.05	0.1	0.02	9.2	<0.1	0.20	9	<0.5	<0.2
3293505	Rock		5	3	0.52	12	0.204	31	1.39	0.142	0.07	<0.1	0.02	5.1	<0.1	0.27	8	0.7	<0.2
3293506	Rock		2	4	0.47	6	0.153	37	1.97	0.017	0.01	0.1	0.04	5.2	<0.1	<0.05	11	<0.5	<0.2
3293507	Rock		5	2	0.59	28	0.229	29	2.34	0.212	0.08	<0.1	0.07	7.8	<0.1	0.21	9	1.2	<0.2
3293508	Rock		10	29	1.44	21	0.273	35	2.83	0.081	0.11	0.3	0.04	13.5	<0.1	0.41	11	<0.5	<0.2
3293509	Rock		29	4	0.55	50	0.117	<20	1.57	0.060	0.17	0.1	<0.01	2.5	<0.1	<0.05	6	<0.5	<0.2
3293510	Rock		7	19	1.06	24	0.178	<20	3.74	0.128	0.11	0.2	<0.01	12.3	<0.1	0.37	10	<0.5	<0.2
3293511	Rock		7	16	0.57	55	0.148	<20	4.99	0.639	0.13	0.1	<0.01	7.5	<0.1	0.14	9	<0.5	<0.2
3293512	Rock		6	16	0.23	9	0.173	<20	2.21	<0.001	<0.01	0.1	0.08	5.4	<0.1	1.47	8	1.0	<0.2
3293513	Rock		8	47	0.72	35	0.319	<20	2.13	0.179	0.09	0.5	0.25	5.5	0.2	1.95	9	1.6	0.3
3293514	Rock		8	12	0.81	33	0.176	<20	4.17	0.523	0.09	0.1	0.01	3.6	<0.1	1.93	10	1.3	0.2
3293515	Rock		6	19	0.66	3	0.228	<20	3.84	0.026	0.03	0.3	0.13	4.7	0.1	2.49	13	0.5	<0.2
3293516	Rock		8	16	0.54	28	0.237	<20	2.31	0.191	0.12	0.2	0.03	3.7	<0.1	1.22	7	<0.5	<0.2
3293517	Rock		6	21	0.88	2	0.232	<20	5.12	0.005	0.02	0.3	0.08	6.7	<0.1	1.07	17	<0.5	<0.2
3293518	Rock		6	10	0.27	15	0.191	<20	2.92	0.226	0.06	0.3	0.92	4.8	0.9	3.61	10	1.0	0.4
3293519	Rock		6	17	1.06	24	0.223	<20	3.72	0.391	0.17	0.2	0.13	6.7	0.2	1.60	11	<0.5	<0.2
3293520	Rock		6	11	0.78	14	0.184	<20	2.15	0.136	0.11	0.2	0.45	3.7	0.5	3.00	8	0.9	0.3
3293521	Rock		7	21	0.72	16	0.222	<20	1.90	0.213	0.12	0.3	0.02	3.6	<0.1	1.85	6	<0.5	0.6
3293522	Rock		7	13	1.13	102	0.145	<20	5.39	0.351	0.17	0.1	0.01	6.5	<0.1	0.58	12	<0.5	<0.2
3293523	Rock		10	29	0.91	103	0.276	<20	5.40	0.704	0.38	0.2	0.07	4.8	0.1	1.96	13	0.6	0.3
3293524	Rock		5	23	1.08	27	0.262	<20	2.99	0.168	0.15	0.3	0.17	9.2	0.1	3.18	10	1.3	0.5
3293525	Rock		5	10	0.73	18	0.130	<20	2.19	0.188	0.10	0.1	<0.01	3.5	<0.1	0.96	6	<0.5	<0.2
3293526	Rock		5	45	1.08	16	0.210	<20	2.98	0.118	0.09	0.2	0.12	9.2	<0.1	1.55	9	<0.5	<0.2
3293527	Rock		5	20	0.49	24	0.144	<20	2.92	0.034	0.04	0.2	0.67	3.5	0.5	2.27	7	3.1	<0.2
3293528	Rock		6	55	1.70	32	0.144	<20	3.84	0.013	0.07	0.3	0.23	13.2	0.1	<0.05	17	1.8	1.8
3293529	Rock		5	36	0.56	17	0.152	<20	2.17	0.068	0.04	0.4	0.96	7.8	0.5	7.99	7	4.8	0.9
3293851	Rock		10	29	0.42	11	0.165	<20	4.29	0.097	0.06	0.2	0.02	4.8	<0.1	0.28	12	<0.5	<0.2

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PHONE (604) 253-3158

**Client:** Longford Exploration Services Ltd.  
460-688 West Hastings St.  
Vancouver British Columbia V6B 1P1 Canada

**Project:** Angus  
**Report Date:** October 29, 2019

**Page:** 3 of 3 **Part:** 1 of 2

**CERTIFICATE OF ANALYSIS**

**VAN19002847.2**

Method	Analyte	Unit	WGHT	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	
			Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
			kg	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	
			MDL																			
3293852	Rock		1.09	20.1	757.3	16.7	51	1.8	16.9	38.1	603	10.87	12.8	43.4	1.1	46	<0.1	1.6	1.2	119	0.91	0.078
3293853	Rock		1.60	11.2	139.5	3.6	90	0.2	14.3	18.6	903	5.27	3.4	10.4	1.5	51	<0.1	<0.1	0.1	198	2.21	0.159
3293854	Rock		2.39	2.1	299.8	14.9	114	2.2	12.8	19.3	565	9.03	38.1	75.7	1.1	43	0.7	0.6	0.9	127	1.36	0.068
3293855	Rock		1.41	3.7	542.7	4.5	75	1.6	9.3	15.4	638	6.90	6.7	4479.7	1.5	44	0.2	0.6	2.9	130	1.00	0.097
3293856	Rock		1.89	2.4	122.2	6.3	103	0.4	10.3	17.0	975	5.58	5.3	8.3	1.9	127	0.2	<0.1	<0.1	170	2.16	0.166
3293857	Rock		1.23	8.3	1289.3	17.0	53	10.4	11.8	53.6	428	14.74	26.4	29040.4	1.0	12	0.2	4.8	9.8	68	0.51	0.066
3293858	Rock		0.96	9.0	894.4	14.7	76	6.4	11.5	41.8	551	10.57	43.4	11802.3	1.6	9	0.2	0.8	4.3	63	0.63	0.073
3293859	Rock		1.76	4.5	1139.8	111.9	99	35.7	11.8	29.9	717	12.16	271.4	27622.4	1.6	33	0.8	1.2	8.2	95	1.39	0.115
3293860	Rock		2.65	1.3	68.8	4.2	83	0.1	11.3	13.5	803	5.17	1.8	18.0	2.1	143	<0.1	<0.1	<0.1	166	2.76	0.107

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**Project:** Angus  
**Report Date:** October 29, 2019

**Page:** 3 of 3 **Part:** 2 of 2

**CERTIFICATE OF ANALYSIS** **VAN19002847.2**

Method	Analyte	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	FA530	
		La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te	Au
Unit		ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	gm/t
MDL		1	1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2	0.9
3293852	Rock	5	14	0.95	56	0.191	<20	2.55	0.107	0.17	0.4	0.10	10.4	0.2	6.55	10	20.5	1.2	
3293853	Rock	8	20	1.51	202	0.302	<20	2.96	0.095	0.51	0.3	0.02	20.1	<0.1	0.09	11	0.6	<0.2	
3293854	Rock	4	18	0.90	26	0.234	<20	3.06	0.036	0.14	0.4	0.20	12.9	<0.1	4.05	11	13.4	0.9	
3293855	Rock	7	16	1.51	146	0.276	<20	3.46	0.130	0.38	0.4	0.39	12.7	0.1	1.11	12	0.9	3.0	5.6
3293856	Rock	10	13	1.80	327	0.382	<20	4.94	0.349	0.85	0.3	0.05	16.6	0.1	0.12	14	<0.5	<0.2	
3293857	Rock	3	10	1.09	34	0.124	<20	2.35	0.025	0.20	0.6	3.18	5.2	0.5	>10	10	6.8	14.5	19.2
3293858	Rock	3	10	1.22	78	0.128	<20	2.62	0.023	0.24	0.5	1.77	5.5	0.4	5.41	9	3.6	5.8	14.5
3293859	Rock	7	10	1.44	59	0.240	<20	3.44	0.030	0.23	1.1	1.94	8.7	0.3	6.30	14	3.1	13.7	27.1
3293860	Rock	11	20	1.57	193	0.318	<20	5.57	0.480	0.38	0.2	0.04	15.1	<0.1	0.07	14	<0.5	<0.2	

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**Client:** Longford Exploration Services Ltd.  
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Vancouver British Columbia V6B 1P1 Canada

**Project:** Angus  
**Report Date:** October 29, 2019

**Page:** 1 of 1 **Part:** 1 of 2

## QUALITY CONTROL REPORT

VAN19002847.2

Method	Analyte	WGHT	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200
		Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
Unit	Unit	kg	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%
MDL	MDL	0.01	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	1	0.01	0.001	
Pulp Duplicates																					
3293506	Rock	1.28	0.1	73.9	25.7	45	<0.1	7.6	9.7	293	2.61	1.4	62.0	0.3	14	0.1	0.1	<0.1	132	2.06	0.032
REP 3293506	QC		0.1	73.6	23.8	41	<0.1	7.9	9.4	281	2.61	1.0	58.0	0.2	13	<0.1	0.1	<0.1	133	2.05	0.028
3293852	Rock	1.09	20.1	757.3	16.7	51	1.8	16.9	38.1	603	10.87	12.8	43.4	1.1	46	<0.1	1.6	1.2	119	0.91	0.078
REP 3293852	QC		20.5	766.2	16.6	51	1.9	17.1	38.0	612	11.02	12.8	44.6	1.1	47	<0.1	1.7	1.2	118	0.92	0.079
Core Reject Duplicates																					
3293514	Rock	1.92	0.5	396.6	1.4	37	0.3	42.1	46.8	316	4.51	1.6	20.5	1.4	221	<0.1	<0.1	<0.1	92	2.81	0.158
DUP 3293514	QC		0.4	370.9	1.5	39	0.3	40.3	47.8	287	4.58	0.9	17.8	1.5	215	<0.1	<0.1	<0.1	94	2.58	0.162
Reference Materials																					
STD AGPROOF	Standard																				
STD BVGEO01	Standard		10.8	4538.3	185.6	1745	2.6	163.8	25.6	745	3.92	110.8	192.5	14.1	57	6.1	2.2	23.7	75	1.35	0.072
STD DS11	Standard		14.3	163.6	143.4	362	1.8	84.2	13.7	1023	3.16	45.3	246.3	8.5	75	2.6	7.8	12.8	50	1.08	0.067
STD OREAS262	Standard		0.7	119.2	55.1	152	0.5	67.4	28.4	552	3.44	34.0	61.2	9.3	36	0.6	1.9	0.9	23	3.06	0.039
STD OREAS262	Standard		0.7	116.1	62.9	164	0.5	68.7	25.7	564	3.50	37.4	56.8	10.5	39	0.7	2.8	1.2	23	3.05	0.041
STD OXQ114	Standard																				
STD SP49	Standard																				
STD BVGEO01 Expected			10.8	4415	187	1741	2.53	163	25	733	3.7	121	219	14.4	55	6.5	2.2	25.6	73	1.3219	0.0727
STD DS11 Expected			13.9	149	138	345	1.71	77.7	14.2	1055	3.1	42.8	79	7.65	67.3	2.37	7.2	12.2	50	1.063	0.0701
STD OREAS262 Expected			0.68	118	56	154	0.45	62	26.9	530	3.284	35.8	65	9.33	36	0.61	3.39	1.03	22.5	2.98	0.04
STD AGPROOF Expected																					
STD SP49 Expected																					
STD OXQ114 Expected																					
BLK	Blank		<0.1	0.3	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.001
BLK	Blank		<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.001
BLK	Blank																				
Prep Wash																					
ROCK-VAN	Prep Blank		1.0	3.0	1.2	33	<0.1	0.8	3.1	465	1.76	1.1	<0.5	2.2	20	<0.1	<0.1	<0.1	22	0.56	0.035
ROCK-VAN	Prep Blank		1.3	2.4	1.3	27	<0.1	0.5	3.2	421	1.77	1.3	<0.5	2.4	21	<0.1	<0.1	<0.1	24	0.57	0.039

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Client: **Longford Exploration Services Ltd.**  
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Vancouver British Columbia V6B 1P1 Canada

Project: Angus  
Report Date: October 29, 2019

Page: 1 of 1 Part: 2 of 2

## QUALITY CONTROL REPORT

VAN19002847.2

Method	Analyte	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	FA530	
		La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te	Au
Unit		ppm	ppm	%	ppm	%	ppm	%	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	gm/t
MDL		1	1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.05	1	0.5	0.2	0.9	
Pulp Duplicates																			
3293506	Rock	2	4	0.47	6	0.153	37	1.97	0.017	0.01	0.1	0.04	5.2	<0.1	<0.05	11	<0.5	<0.2	
REP 3293506	QC	2	4	0.47	5	0.151	33	1.99	0.017	0.01	0.1	0.03	5.1	<0.1	<0.05	10	<0.5	<0.2	
3293852	Rock	5	14	0.95	56	0.191	<20	2.55	0.107	0.17	0.4	0.10	10.4	0.2	6.55	10	20.5	1.2	
REP 3293852	QC	5	14	0.97	58	0.198	<20	2.60	0.107	0.17	0.4	0.10	10.6	0.2	6.76	10	20.6	1.2	
Core Reject Duplicates																			
3293514	Rock	8	12	0.81	33	0.176	<20	4.17	0.523	0.09	0.1	0.01	3.6	<0.1	1.93	10	1.3	0.2	
DUP 3293514	QC	7	11	0.81	32	0.175	<20	4.23	0.514	0.09	0.1	<0.01	4.0	<0.1	1.77	9	0.7	0.3	
Reference Materials																			
STD AGPROOF	Standard																		<0.9
STD BVGEO01	Standard	26	189	1.35	339	0.243	<20	2.44	0.202	0.92	3.2	0.09	5.8	0.6	0.70	8	4.9	1.0	
STD DS11	Standard	20	64	0.87	442	0.104	<20	1.18	0.073	0.41	2.8	0.25	3.3	5.7	0.29	5	2.2	4.6	
STD OREAS262	Standard	17	45	1.21	255	0.003	<20	1.41	0.073	0.34	<0.1	0.17	3.2	0.5	0.25	4	0.5	0.2	
STD OREAS262	Standard	18	43	1.21	265	0.003	29	1.29	0.072	0.33	0.1	0.16	3.3	0.5	0.26	4	<0.5	0.2	
STD OXQ114	Standard																		33.8
STD SP49	Standard																		18.0
STD BVGEO01 Expected		25.9	171	1.2963	340	0.233		2.347	0.1924	0.89	3.5	0.1	5.97	0.62	0.6655	7.37	4.84	1.02	
STD DS11 Expected		18.6	61.5	0.85	417	0.0976		1.129	0.0694	0.4	2.9	0.26	3.1	4.9	0.2835	4.7	2.2	4.56	
STD OREAS262 Expected		15.9	41.7	1.17	248	0.003		1.204	0.071	0.312	0.13	0.17	3.24	0.47	0.253	3.73	0.4	0.23	
STD AGPROOF Expected																			0
STD SP49 Expected																			18.34
STD OXQ114 Expected																			35.2
BLK	Blank	<1	<1	<0.01	<1	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2	
BLK	Blank	<1	<1	<0.01	<1	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2	
BLK	Blank																		<0.9
Prep Wash																			
ROCK-VAN	Prep Blank	6	3	0.46	45	0.075	24	0.86	0.081	0.08	<0.1	<0.01	2.2	<0.1	<0.05	3	<0.5	<0.2	
ROCK-VAN	Prep Blank	7	3	0.41	72	0.082	27	0.76	0.077	0.08	<0.1	<0.01	2.4	<0.1	<0.05	3	<0.5	<0.2	

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# APPENDIX G: 2019 Soil Sample Analytical Certificates



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Vancouver British Columbia V6B 1P1 Canada

Submitted By: James Rogers  
Receiving Lab: Canada-Vancouver  
Received: September 30, 2019  
Report Date: October 11, 2019  
Page: 1 of 3

## CERTIFICATE OF ANALYSIS VAN19002848.1

### CLIENT JOB INFORMATION

Project: Angus  
Shipment ID:  
P.O. Number  
Number of Samples: 53

### SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps  
PICKUP-RJT Client to Pickup Rejects

### SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
DY060	53	Dry at 60C			VAN
SS80	53	Dry at 60C sieve 100g to -80 mesh			VAN
SVRJT	53	Save all or part of Soil Reject			VAN
AQ200	53	1:1:1 Aqua Regia digestion ICP-MS analysis	0.5	Completed	VAN

### ADDITIONAL COMMENTS

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Longford Exploration Services Ltd.  
460-688 West Hastings St.  
Vancouver British Columbia V6B 1P1  
Canada

CC: Vedran Pobric  
Matt Krukowski

KERRY JAY  
Geotechnical Project Specialist

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**Project:** Angus  
**Report Date:** October 11, 2019

**Page:** 2 of 3

**Part:** 2 of 2

# CERTIFICATE OF ANALYSIS

VAN19002848.1

Method	Analyte	AQ200		AQ200		AQ200		AQ200		AQ200		AQ200		AQ200		AQ200		AQ200	
		Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te		
Unit		ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppm	ppm	ppm			
MDL		1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.05	1	0.5	0.2			
3293651	Soil	15	0.32	43	0.121	<20	1.63	0.010	0.04	<0.1	0.12	3.9	<0.1	<0.05	9	<0.5	<0.2		
3293652	Soil	32	1.09	131	0.182	<20	3.39	0.016	0.08	0.1	0.05	9.1	<0.1	<0.05	9	0.7	<0.2		
3293653	Soil	26	0.86	86	0.170	<20	3.55	0.017	0.06	0.1	0.11	7.5	<0.1	<0.05	9	0.7	<0.2		
3293654	Soil	22	0.65	59	0.184	<20	3.46	0.015	0.05	<0.1	0.05	6.9	<0.1	<0.05	11	1.0	<0.2		
3293655	Soil	17	0.47	45	0.196	<20	2.45	0.014	0.04	<0.1	0.05	4.9	<0.1	<0.05	10	<0.5	<0.2		
3293656	Soil	21	0.49	55	0.179	<20	3.08	0.013	0.05	<0.1	0.10	4.8	<0.1	<0.05	11	<0.5	<0.2		
3293657	Soil	23	0.60	68	0.206	<20	3.44	0.013	0.05	<0.1	0.04	5.6	<0.1	<0.05	11	<0.5	<0.2		
3293658	Soil	24	0.66	52	0.259	<20	4.63	0.014	0.05	0.2	0.08	5.8	<0.1	<0.05	12	0.6	<0.2		
3293659	Soil	20	0.55	51	0.224	<20	3.27	0.015	0.04	<0.1	0.04	5.4	<0.1	<0.05	10	0.7	<0.2		
3293660	Soil	26	0.71	62	0.237	<20	4.31	0.012	0.05	0.1	0.08	6.7	<0.1	<0.05	12	0.7	<0.2		
3293661	Soil	26	0.67	72	0.220	<20	4.06	0.013	0.06	<0.1	0.11	6.5	<0.1	<0.05	11	0.6	<0.2		
3293662	Soil	33	1.13	122	0.201	<20	4.53	0.019	0.11	0.2	0.07	10.9	<0.1	<0.05	11	<0.5	<0.2		
3293663	Soil	39	0.99	121	0.214	<20	5.08	0.012	0.06	<0.1	0.07	8.6	<0.1	<0.05	12	0.8	<0.2		
3293664	Soil	31	0.61	75	0.234	<20	4.92	0.011	0.05	<0.1	0.09	6.5	<0.1	<0.05	12	<0.5	<0.2		
3293665	Soil	26	0.55	72	0.206	<20	4.15	0.012	0.05	<0.1	0.09	5.6	<0.1	<0.05	11	0.6	<0.2		
3293666	Soil	29	0.58	82	0.236	<20	4.48	0.012	0.06	<0.1	0.10	5.7	<0.1	<0.05	12	<0.5	<0.2		
3293667	Soil	27	0.69	69	0.230	<20	4.47	0.011	0.06	0.1	0.09	6.3	<0.1	<0.05	12	0.6	<0.2		
3293668	Soil	18	0.48	55	0.187	<20	2.48	0.014	0.04	<0.1	0.06	5.2	<0.1	<0.05	10	<0.5	<0.2		
3293669	Soil	15	0.37	39	0.176	<20	1.90	0.011	0.04	<0.1	0.05	4.4	<0.1	<0.05	10	<0.5	<0.2		
3293670	Soil	20	0.43	48	0.180	<20	2.45	0.011	0.05	<0.1	0.08	4.5	<0.1	<0.05	11	0.6	<0.2		
3293671	Soil	23	0.61	61	0.212	<20	3.66	0.013	0.05	0.1	0.07	5.6	<0.1	<0.05	12	1.1	<0.2		
3293672	Soil	23	0.65	73	0.179	<20	3.74	0.013	0.06	<0.1	0.06	6.2	<0.1	<0.05	11	<0.5	<0.2		
3293673	Soil	29	0.65	77	0.230	<20	4.23	0.012	0.06	<0.1	0.09	7.5	<0.1	<0.05	11	<0.5	<0.2		
3293674	Soil	22	0.75	56	0.195	<20	3.85	0.014	0.05	0.2	0.12	6.8	<0.1	<0.05	11	1.2	<0.2		
3293675	Soil	26	0.85	55	0.232	<20	4.63	0.015	0.06	0.1	0.09	7.1	<0.1	<0.05	12	<0.5	<0.2		
3293676	Soil	30	0.61	60	0.220	<20	5.24	0.010	0.05	0.1	0.09	6.2	<0.1	<0.05	13	0.9	<0.2		
3293751	Soil	34	1.19	107	0.184	<20	3.01	0.026	0.08	0.2	0.04	9.1	<0.1	<0.05	8	0.7	<0.2		
3293752	Soil	29	1.15	107	0.189	<20	3.29	0.034	0.10	0.2	0.06	9.4	<0.1	<0.05	9	<0.5	<0.2		
3293753	Soil	19	0.56	39	0.151	<20	2.76	0.015	0.04	<0.1	0.08	6.2	<0.1	<0.05	9	<0.5	<0.2		
3293754	Soil	24	0.67	63	0.201	<20	4.65	0.017	0.05	<0.1	0.08	7.0	0.2	<0.05	12	0.7	<0.2		

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**Client:** Longford Exploration Services Ltd.  
460-688 West Hastings St.  
Vancouver British Columbia V6B 1P1 Canada

**Project:** Angus  
**Report Date:** October 11, 2019

**Page:** 3 of 3 **Part:** 1 of 2

**CERTIFICATE OF ANALYSIS** **VAN19002848.1**

Method	Analyte	AQ200																			
		Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La
Unit		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm
MDL		0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001	1
3293755	Soil	1.3	111.8	7.1	80	0.4	19.3	14.2	568	4.98	12.9	21.2	1.4	18	0.1	0.3	0.2	147	0.27	0.119	4
3293756	Soil	1.7	52.6	6.5	54	0.2	14.6	24.1	948	3.59	6.6	9.9	0.6	33	0.3	0.2	0.1	115	0.75	0.050	16
3293757	Soil	1.1	85.1	7.1	78	0.3	18.3	13.1	522	4.59	12.7	39.9	1.1	23	<0.1	0.2	0.2	129	0.30	0.067	5
3293758	Soil	1.4	170.5	7.3	99	0.4	37.6	29.1	709	5.71	17.8	27.5	2.1	23	0.2	0.3	0.2	167	0.30	0.070	10
3293759	Soil	1.1	152.6	6.7	95	0.2	29.3	20.1	746	5.17	12.4	23.5	1.8	20	0.2	0.3	0.2	152	0.27	0.081	5
3293760	Soil	1.3	106.8	6.7	75	0.3	24.9	19.6	645	5.07	12.0	9.5	1.5	20	0.1	0.2	0.2	153	0.28	0.064	7
3293761	Soil	0.9	84.0	6.8	137	0.3	20.6	14.8	443	4.02	9.8	8.3	1.5	19	0.2	0.2	0.2	113	0.24	0.086	5
3293762	Soil	1.6	120.4	4.7	82	0.3	25.5	25.3	556	4.84	14.5	9.2	1.2	28	0.2	0.3	0.2	143	0.53	0.076	11
3293763	Soil	0.8	184.9	5.5	79	0.2	32.1	24.5	673	5.48	27.8	28.6	1.6	28	<0.1	0.4	0.2	163	0.28	0.073	10
3293764	Soil	0.9	148.2	5.5	81	0.2	24.9	17.4	537	4.89	15.0	9.7	1.6	18	0.1	0.3	0.2	146	0.23	0.080	5
3293765	Soil	0.8	136.0	12.8	92	0.4	23.9	18.1	731	4.56	20.8	245.2	1.9	24	0.1	0.3	0.2	124	0.31	0.094	8
3293766	Soil	0.9	167.0	11.3	81	0.4	31.8	24.0	739	5.17	21.1	47.8	1.9	21	<0.1	0.4	0.2	141	0.27	0.084	12
3293767	Soil	0.8	99.1	5.5	62	0.3	17.7	22.3	497	3.58	9.8	12.9	1.6	15	<0.1	0.3	0.1	83	0.15	0.055	12
3293768	Soil	2.5	123.4	9.6	139	0.4	35.6	51.3	1064	5.59	22.4	10.7	1.9	18	0.3	0.5	0.3	178	0.31	0.161	8
3293769	Soil	0.6	46.8	5.3	71	0.2	10.8	9.8	499	3.56	5.1	11.7	1.1	20	<0.1	0.2	0.2	103	0.28	0.060	5
3293770	Soil	0.7	68.3	22.0	89	0.3	15.5	20.0	1819	3.87	13.4	6.3	1.1	21	0.3	0.3	0.4	106	0.30	0.151	5
3293771	Soil	0.7	92.4	9.4	85	0.3	18.9	15.5	661	3.86	8.8	22.9	1.3	22	<0.1	0.2	0.2	101	0.33	0.121	6
3293772	Soil	0.5	81.6	11.3	93	0.2	18.7	14.6	901	3.89	9.9	16.6	1.3	22	0.1	0.2	0.2	104	0.35	0.120	6
3293773	Soil	0.5	141.1	12.7	77	0.1	24.8	22.2	1022	4.63	16.8	15.6	1.4	33	0.1	0.4	0.2	130	0.47	0.115	9
3293774	Soil	3.3	46.0	18.1	37	0.3	10.7	9.7	567	2.66	9.0	3.7	0.4	42	0.4	0.6	0.2	94	1.48	0.051	7
3293775	Soil	1.2	116.2	12.9	78	0.1	26.4	28.3	1519	4.54	17.6	102.9	1.2	21	0.1	0.4	0.2	115	0.40	0.140	7
3293776	Soil	0.8	52.4	11.7	91	0.1	16.5	24.8	2040	3.85	7.6	1.8	0.9	20	0.2	0.4	0.2	110	0.37	0.112	8
3293777	Soil	0.4	67.8	24.5	80	0.2	16.2	13.0	2426	3.85	9.0	5.3	1.0	21	0.2	0.4	0.3	106	0.34	0.090	5

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**Client:** Longford Exploration Services Ltd.  
460-688 West Hastings St.  
Vancouver British Columbia V6B 1P1 Canada

**Project:** Angus  
**Report Date:** October 11, 2019

**Page:** 3 of 3

**Part:** 2 of 2

# CERTIFICATE OF ANALYSIS

**VAN19002848.1**

Method	Analyte	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200
		Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te
Unit		ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppm	ppm	ppm	
MDL		1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2
3293755	Soil	29	0.66	52	0.256	<20	4.37	0.014	0.06	0.1	0.14	6.5	<0.1	<0.05	13	0.7	<0.2
3293756	Soil	20	0.58	44	0.201	<20	2.70	0.016	0.05	<0.1	0.07	6.3	<0.1	0.09	10	0.9	<0.2
3293757	Soil	27	0.56	73	0.237	<20	4.13	0.014	0.05	0.1	0.08	5.5	<0.1	<0.05	12	1.1	<0.2
3293758	Soil	43	1.29	172	0.329	<20	6.00	0.018	0.11	0.2	0.08	14.9	<0.1	<0.05	14	1.8	<0.2
3293759	Soil	39	1.06	119	0.331	<20	6.19	0.016	0.09	0.2	0.07	8.9	<0.1	<0.05	13	0.9	<0.2
3293760	Soil	32	0.85	75	0.317	<20	4.75	0.014	0.05	0.1	0.13	8.2	<0.1	0.05	13	0.8	<0.2
3293761	Soil	26	0.58	57	0.238	<20	3.76	0.012	0.06	0.2	0.09	6.2	<0.1	<0.05	11	0.5	<0.2
3293762	Soil	31	0.94	68	0.220	<20	4.51	0.018	0.07	0.2	0.10	8.2	<0.1	0.05	11	1.1	<0.2
3293763	Soil	40	1.37	186	0.329	<20	6.02	0.017	0.09	0.2	0.07	14.7	<0.1	<0.05	13	0.7	<0.2
3293764	Soil	31	0.98	63	0.303	<20	5.44	0.014	0.06	0.1	0.10	8.8	<0.1	<0.05	13	0.9	<0.2
3293765	Soil	31	0.93	93	0.267	<20	4.51	0.015	0.07	0.2	0.09	9.1	<0.1	<0.05	12	<0.5	<0.2
3293766	Soil	38	1.14	107	0.296	<20	5.25	0.013	0.08	0.3	0.11	13.5	<0.1	<0.05	12	1.4	<0.2
3293767	Soil	19	0.66	108	0.106	<20	4.67	0.008	0.09	0.3	0.07	7.6	0.1	<0.05	9	0.8	<0.2
3293768	Soil	39	0.76	65	0.234	<20	7.04	0.014	0.06	0.4	0.12	10.6	0.1	<0.05	14	1.3	<0.2
3293769	Soil	21	0.47	54	0.215	<20	3.13	0.014	0.04	<0.1	0.07	5.2	<0.1	<0.05	10	<0.5	<0.2
3293770	Soil	23	0.54	77	0.195	<20	3.45	0.014	0.05	<0.1	0.08	6.3	0.1	<0.05	11	0.9	<0.2
3293771	Soil	25	0.63	71	0.207	<20	3.44	0.015	0.05	<0.1	0.13	7.0	<0.1	<0.05	11	0.8	<0.2
3293772	Soil	25	0.67	77	0.197	<20	3.48	0.015	0.05	<0.1	0.11	7.2	<0.1	<0.05	10	<0.5	<0.2
3293773	Soil	31	1.02	110	0.246	<20	4.17	0.022	0.09	0.2	0.07	10.7	<0.1	<0.05	11	0.8	<0.2
3293774	Soil	22	0.37	60	0.131	<20	2.09	0.013	0.03	0.2	0.13	4.6	<0.1	0.21	7	2.5	<0.2
3293775	Soil	31	0.95	97	0.198	<20	3.79	0.018	0.08	0.2	0.10	8.2	<0.1	0.05	10	0.8	<0.2
3293776	Soil	25	0.59	76	0.198	<20	2.82	0.016	0.05	0.1	0.06	5.3	<0.1	<0.05	11	<0.5	<0.2
3293777	Soil	25	0.58	113	0.214	<20	3.27	0.018	0.05	<0.1	0.10	6.1	0.1	0.06	10	0.7	<0.2

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460-688 West Hastings St.  
Vancouver British Columbia V6B 1P1 Canada

Project: Angus  
Report Date: October 11, 2019

Page: 1 of 1 Part: 1 of 2

**QUALITY CONTROL REPORT** VAN19002848.1

Method	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200
Analyte	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	
Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	
MDL	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001	1	
Pulp Duplicates																					
3293674	Soil	1.0	113.3	12.5	87	0.3	18.5	22.9	1022	4.46	15.7	16.2	1.1	20	0.2	0.4	0.3	119	0.30	0.106	5
REP 3293674	QC	1.1	120.1	13.0	90	0.3	19.5	25.1	1008	4.28	16.6	46.1	1.1	20	0.2	0.4	0.2	118	0.28	0.103	5
3293771	Soil	0.7	92.4	9.4	85	0.3	18.9	15.5	661	3.86	8.8	22.9	1.3	22	<0.1	0.2	0.2	101	0.33	0.121	6
REP 3293771	QC	0.7	93.6	9.2	84	0.2	18.6	14.5	677	3.84	9.1	13.2	1.3	22	<0.1	0.2	0.2	105	0.35	0.123	6
Reference Materials																					
STD BVGEO01	Standard	11.9	4597.4	200.0	1715	2.6	176.7	25.7	805	3.85	118.5	209.8	16.9	60	6.3	3.0	26.0	81	1.36	0.073	30
STD DS11	Standard	16.3	155.4	142.8	342	1.6	81.7	14.5	1056	3.35	44.9	55.5	8.8	72	2.5	7.9	12.0	53	1.09	0.073	21
STD OREAS262	Standard	0.6	119.9	57.6	151	0.4	61.1	27.2	531	3.38	35.2	76.6	9.8	36	0.6	3.9	1.0	23	2.85	0.039	19
STD OREAS262	Standard	0.6	127.5	58.4	154	0.4	66.1	27.4	521	3.36	36.4	62.4	10.1	36	0.7	3.5	1.0	21	2.88	0.040	19
STD DS11 Expected		13.9	149	138	345	1.71	77.7	14.2	1055	3.1	42.8	79	7.65	67.3	2.37	7.2	12.2	50	1.063	0.0701	18.6
STD BVGEO01 Expected		10.8	4415	187	1741	2.53	163	25	733	3.7	121	219	14.4	55	6.5	2.2	25.6	73	1.3219	0.0727	25.9
STD OREAS262 Expected		0.68	118	56	154	0.45	62	26.9	530	3.284	35.8	65	9.33	36	0.61	3.39	1.03	22.5	2.98	0.04	15.9
BLK	Blank	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1	<0.1	<2	<0.01	<0.001	<1
BLK	Blank	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1	<0.1	<2	<0.01	<0.001	<1

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Project: Angus  
Report Date: October 11, 2019

Page: 1 of 1

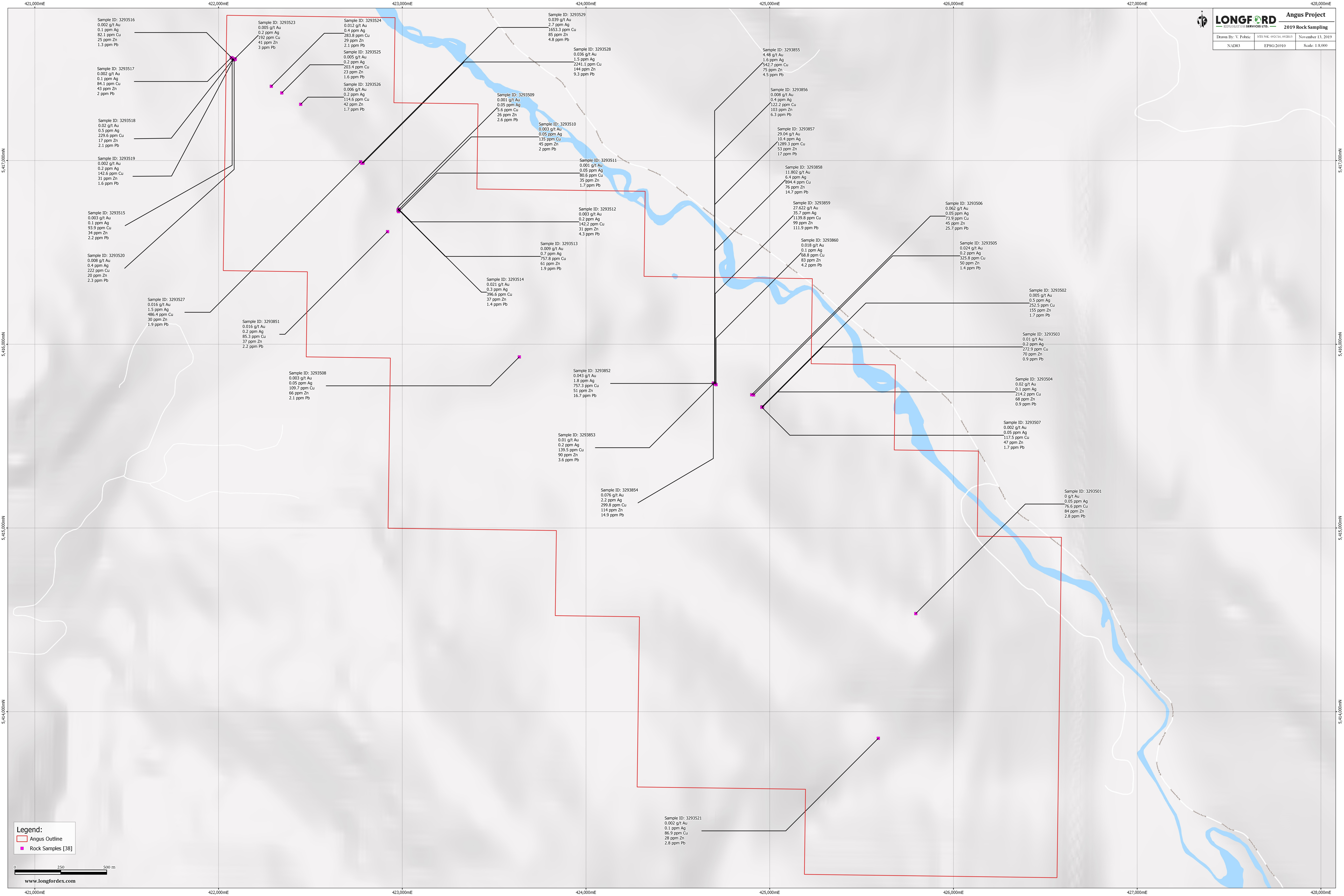
Part: 2 of 2

**QUALITY CONTROL REPORT** VAN19002848.1

Method	Analyte	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200
		Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te	
Unit		ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
MDL		1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.05	1	0.5	0.2		
<b>Pulp Duplicates</b>																		
3293674	Soil	22	0.75	56	0.195	<20	3.85	0.014	0.05	0.2	0.12	6.8	<0.1	<0.05	11	1.2	<0.2	
REP 3293674	QC	23	0.74	59	0.212	<20	3.81	0.014	0.05	0.1	0.12	7.0	<0.1	<0.05	11	0.7	<0.2	
3293771	Soil	25	0.63	71	0.207	<20	3.44	0.015	0.05	<0.1	0.13	7.0	<0.1	<0.05	11	0.8	<0.2	
REP 3293771	QC	25	0.64	69	0.199	<20	3.61	0.015	0.05	<0.1	0.14	6.9	<0.1	<0.05	10	0.5	<0.2	
<b>Reference Materials</b>																		
STD BVGEO01	Standard	191	1.38	350	0.266	<20	2.29	0.202	0.91	3.7	0.10	7.0	0.6	0.70	7	6.1	0.9	
STD DS11	Standard	62	0.85	394	0.104	<20	1.24	0.072	0.44	1.9	0.23	3.6	5.0	0.33	5	3.0	4.8	
STD OREAS262	Standard	47	1.17	257	0.003	<20	1.35	0.065	0.32	0.1	0.15	3.3	0.5	0.27	4	<0.5	0.2	
STD OREAS262	Standard	42	1.14	250	0.003	<20	1.33	0.064	0.33	0.1	0.15	3.5	0.5	0.29	4	0.6	0.2	
STD DS11 Expected		61.5	0.85	417	0.0976		1.129	0.0694	0.4	2.9	0.26	3.1	4.9	0.2835	4.7	2.2	4.56	
STD BVGEO01 Expected		171	1.2963	340	0.233		2.347	0.1924	0.89	3.5	0.1	5.97	0.62	0.6655	7.37	4.84	1.02	
STD OREAS262 Expected		41.7	1.17	248	0.003		1.204	0.071	0.312	0.13	0.17	3.24	0.47	0.253	3.73	0.4	0.23	
BLK	Blank	<1	<0.01	<1	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2	
BLK	Blank	<1	<0.01	<1	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2	

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.

## APPENDIX H: 2019 Rock and Soil Sample IDs, Locations, and Significant Results



Sample ID: 3293516  
 0.002 g/t Au  
 0.1 ppm Ag  
 82.1 ppm Cu  
 25 ppm Zn  
 1.3 ppm Pb

Sample ID: 3293517  
 0.002 g/t Au  
 0.1 ppm Ag  
 84.1 ppm Cu  
 43 ppm Zn  
 2 ppm Pb

Sample ID: 3293518  
 0.02 g/t Au  
 0.5 ppm Ag  
 229.6 ppm Cu  
 17 ppm Zn  
 2.1 ppm Pb

Sample ID: 3293519  
 0.002 g/t Au  
 0.2 ppm Ag  
 142.6 ppm Cu  
 31 ppm Zn  
 1.6 ppm Pb

Sample ID: 3293515  
 0.003 g/t Au  
 0.1 ppm Ag  
 93.9 ppm Cu  
 34 ppm Zn  
 2.2 ppm Pb

Sample ID: 3293520  
 0.008 g/t Au  
 0.4 ppm Ag  
 222 ppm Cu  
 20 ppm Zn  
 2.3 ppm Pb

Sample ID: 3293527  
 0.016 g/t Au  
 1.5 ppm Ag  
 486.4 ppm Cu  
 30 ppm Zn  
 1.9 ppm Pb

Sample ID: 3293851  
 0.016 g/t Au  
 0.2 ppm Ag  
 85.3 ppm Cu  
 37 ppm Zn  
 2.2 ppm Pb

Sample ID: 3293508  
 0.003 g/t Au  
 0.05 ppm Ag  
 109.7 ppm Cu  
 66 ppm Zn  
 2.1 ppm Pb

Sample ID: 3293523  
 0.005 g/t Au  
 0.2 ppm Ag  
 192 ppm Cu  
 41 ppm Zn  
 3 ppm Pb

Sample ID: 3293524  
 0.012 g/t Au  
 0.4 ppm Ag  
 263.8 ppm Cu  
 29 ppm Zn  
 2.1 ppm Pb

Sample ID: 3293525  
 0.005 g/t Au  
 0.2 ppm Ag  
 203.4 ppm Cu  
 23 ppm Zn  
 1.6 ppm Pb

Sample ID: 3293526  
 0.006 g/t Au  
 0.2 ppm Ag  
 114.6 ppm Cu  
 42 ppm Zn  
 1.7 ppm Pb

Sample ID: 3293529  
 0.039 g/t Au  
 2.7 ppm Ag  
 1653.3 ppm Cu  
 85 ppm Zn  
 4.8 ppm Pb

Sample ID: 3293528  
 0.036 g/t Au  
 1.5 ppm Ag  
 2241.1 ppm Cu  
 144 ppm Zn  
 9.3 ppm Pb

Sample ID: 3293509  
 0.001 g/t Au  
 0.05 ppm Ag  
 5.6 ppm Cu  
 26 ppm Zn  
 2.6 ppm Pb

Sample ID: 3293510  
 0.003 g/t Au  
 0.05 ppm Ag  
 135 ppm Cu  
 45 ppm Zn  
 2 ppm Pb

Sample ID: 3293511  
 0.001 g/t Au  
 0.05 ppm Ag  
 80.6 ppm Cu  
 35 ppm Zn  
 1.7 ppm Pb

Sample ID: 3293512  
 0.003 g/t Au  
 0.2 ppm Ag  
 142.2 ppm Cu  
 31 ppm Zn  
 4.3 ppm Pb

Sample ID: 3293513  
 0.009 g/t Au  
 0.7 ppm Ag  
 757.8 ppm Cu  
 61 ppm Zn  
 1.9 ppm Pb

Sample ID: 3293514  
 0.021 g/t Au  
 0.3 ppm Ag  
 396.6 ppm Cu  
 37 ppm Zn  
 1.4 ppm Pb

Sample ID: 3293852  
 0.043 g/t Au  
 1.8 ppm Ag  
 757.3 ppm Cu  
 51 ppm Zn  
 16.7 ppm Pb

Sample ID: 3293853  
 0.01 g/t Au  
 0.2 ppm Ag  
 139.5 ppm Cu  
 90 ppm Zn  
 3.6 ppm Pb

Sample ID: 3293854  
 0.076 g/t Au  
 2.2 ppm Ag  
 299.8 ppm Cu  
 114 ppm Zn  
 14.9 ppm Pb

Sample ID: 3293855  
 4.48 g/t Au  
 1.6 ppm Ag  
 542.7 ppm Cu  
 75 ppm Zn  
 4.5 ppm Pb

Sample ID: 3293856  
 0.008 g/t Au  
 0.4 ppm Ag  
 222.2 ppm Cu  
 103 ppm Zn  
 6.3 ppm Pb

Sample ID: 3293857  
 29.04 g/t Au  
 10.4 ppm Ag  
 1289.3 ppm Cu  
 53 ppm Zn  
 17 ppm Pb

Sample ID: 3293858  
 11.802 g/t Au  
 6.4 ppm Ag  
 894.4 ppm Cu  
 76 ppm Zn  
 14.7 ppm Pb

Sample ID: 3293859  
 27.622 g/t Au  
 35.7 ppm Ag  
 1139.8 ppm Cu  
 99 ppm Zn  
 111.9 ppm Pb

Sample ID: 3293860  
 0.018 g/t Au  
 0.1 ppm Ag  
 68.8 ppm Cu  
 83 ppm Zn  
 4.2 ppm Pb

Sample ID: 3293506  
 0.062 g/t Au  
 0.05 ppm Ag  
 73.9 ppm Cu  
 45 ppm Zn  
 25.7 ppm Pb

Sample ID: 3293505  
 0.024 g/t Au  
 0.2 ppm Ag  
 325.8 ppm Cu  
 50 ppm Zn  
 1.4 ppm Pb

Sample ID: 3293502  
 0.005 g/t Au  
 0.5 ppm Ag  
 252.5 ppm Cu  
 155 ppm Zn  
 1.7 ppm Pb

Sample ID: 3293503  
 0.01 g/t Au  
 0.2 ppm Ag  
 272.9 ppm Cu  
 70 ppm Zn  
 0.9 ppm Pb

Sample ID: 3293504  
 0.02 g/t Au  
 0.1 ppm Ag  
 214.2 ppm Cu  
 68 ppm Zn  
 0.9 ppm Pb

Sample ID: 3293507  
 0.002 g/t Au  
 0.05 ppm Ag  
 117.5 ppm Cu  
 47 ppm Zn  
 1.7 ppm Pb

Sample ID: 3293501  
 0 g/t Au  
 0.05 ppm Ag  
 76.6 ppm Cu  
 84 ppm Zn  
 2.8 ppm Pb

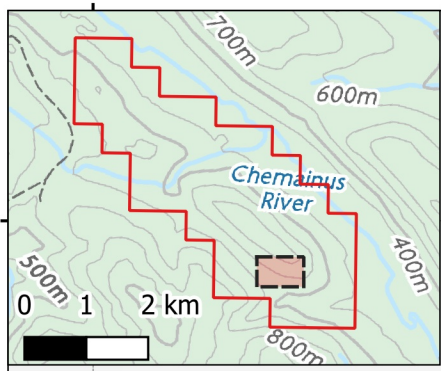
Sample ID: 3293521  
 0.002 g/t Au  
 0.1 ppm Ag  
 86.9 ppm Cu  
 28 ppm Zn  
 2.8 ppm Pb

**Legend:**  
 [Red Outline] Angus Outline  
 [Purple Dot] Rock Samples [38]

0 250 500 m  
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Drawn By: V. Pobric	NTS 50K: 092C16, 092B13	November 13, 2019
NAD83	EPSG:26910	Scale: 1:1,800



**Legend:**  
 Angus Outline  
 2019 Angus Soils [51]

